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Specific Gravity of Soils.—Cohesion.—The specific gravity of soils is ascertained by finding how much water a given weight of dry soil displaces. To dry a soil where one has no apparatus designed expressly for the purpose, it may be spread to the amount of four hundred grains on a quarter of a sheet of white foolscap writing paper, which may be placed on another piece of white paper laid on a heated stove. This should be as hot as it can be and not char or burn the paper. The soil should be stirred with a glass or steel rod, or with the blade of a clean knife, to hasten the drying. A paper with soil upon it may be put upon an earthen plate and set in a common cooking stove hot enough nearly to bake bread, where it will, if properly spread out on the paper, dry in thirty minutes. Any heat that does not burn the paper will not consume nor char the mold, or organic matter in the soil. Of this dried soil, weigh out say 357 grains, which may be put into a specific gravity bottle which will hold 1000 grains. (One of a different weight will answer, if the weight be known.) A bottle holding 1000 grains of water ought, when 357 grains of dry soil are added, to weigh 1357 grains, provided none of the water was displaced by the earth. But it is obvious that so much space in the bottle as the solid matter introduced really filled, the water must leave as the soil was added.

Again; if the soil weighed precisely the same per cubic inch as the water, then it is clear that if the bottle were half filled with water and half with earth, the two together would still weigh 1000 grains, or the same that the water alone did; but the result of the experiment may show that the addition of 357 grains increases the weight of the contents of the bottle from 1000 to 1285 grains. Now, as the whole of the water and soil weigh 1357 grains, it is plain that if we subtract 1285 from 1357, the difference is 72 grains, which is the exact weight of the water displaced, and the exact volume of the soil weighing in the air 357 grains—water being the standard. As 72 is to 357, or as the weight of the water is to that of the solid of equal volume, so is 1000 to 4958. In this case the soil or other mineral is 4 and nearly 96-100 times the specific gravity of water. This is heavier than any soil, but not so heavy as iron filings.

The specific gravity of solid bodies of considerable size can not be determined in the manner above described; but it may be the circumstance that water partly supports solids immersed in it, which support is greater or smaller as the body is lighter or heavier compared with its volume. A solid, in order to sink in a liquid, has to displace and push upward a quantity of it equal to its own bulk, and to resist the weight of the liquid, or its tendency to sink down again. To illustrate the principle of the phenomenon under consideration, let us suppose one has a gold coin which, weighed in the air,

gives the right result as to the quantity of metal present; but there is a well grounded suspicion that the coin contains too much copper or silver. In what way, short of a chemical analysis, can the fact be ascertained? If the coin contains a lighter metal than gold, (and copper and silver are lighter,) to give the proper weight in the atmosphere it must be as much larger in bulk as there is an excess of silver or copper. Hence, if the coin be suspended in water by a fine silk thread attached to the bottom of the pan connected with one end of the balance, and weights be placed on the opposite pan or scale, less weights will be required to support the coin the larger its volume as compared with its weight in the atmosphere — the support of the water lifting it upward equal to the water displaced. By weighing a coin in the air and again in pure water, if it give the right weight in both instances, it can hardly fail of being genuine. Platinum being a heavier metal than gold, formerly when gold was comparatively dearer than it now is, alloys of gold, copper, and platinum are said to have been formed so near the right specific gravity, that nothing short of an analysis would expose the fraud. Since platinum has risen in price by its extensive use in tipping the ends of telegraph wires, and gold has become unusually abundant, any fraud of this kind would yield no profit if undetected.

All weighing, whether performed by the chemist or the farmer, have for their object to measure the force of gravity of the body weighed. A variety of experiments may easily be tried to illustrate the influence of the surrounding medium on the gravity of bodies, whether in air, water, or quicksilver.

Cohesion is a term used to designate that force which keeps the molecules of matter together. It is usually called "the cohesion of aggregation;" or "attractive aggregation." If there was no force antagonist to this, the whole universe would be one solid, immovable mass of matter. The force of *repulsion*, however, so strikingly shown in the air that surrounds the globe, serves to prevent such an aggregation of molecules. In splitting logs for rails and staves, and rocks for building purposes, the farmer has occasion to overcome the cohesive force of both organized and mineral matter. Cohesion is strongly developed in beating gold into leaves of extreme tenuity. A single grain will readily cover 1400 square inches; and with a microscope the gold on the millionth of a square inch is distinctly visible; so that without parting with its cohesive attraction, gold may be divided into particles of at least 1-1,400,000,000 of a square inch in size, and retain the color and other properties of the largest mass.

This force of molecular cohesion acts only at a distance so minute as to escape the most delicate examination. The fragments of a piece of glass or metal just broken, when laid ever so closely together, have no tendency to unite again; but if the surfaces be pressed together, union may take place, though only in a few points, and imperfectly. Yet when the surfaces of plate glass laid flat on each other, and subjected to considerable pressure, are allowed to remain for some time, they are found to grow together so completely, that thick masses may be ground as if they had always formed a single piece. Surfaces of lead may be cut so smoothly that, when pressed together, the cohesive force is brought into play with considerable power. The viscidity of fluids is thought to arise from the same natural law, as is also the globular form of a drop of rain. When a drop of water spreads over a large surface of wood or other solid, the cohesive force between the particles of water and the solid is stronger than that between the particles of water for each other. In the wetting of dry soils, this diffusion of water by the molecular attraction of liquids and solids is strikingly exemplified.

Clairaut found, as the result of his mathematical investigations, that all the phenomena of capillary tubes depend on the relation of two forces: 1st, The cohesion of the particles of the fluid for each other. 2d, The attraction of the solid for those of the fluid. When a glass tube is dipped into different liquids, if the force of the attraction of the glass is less than half the force of cohesion of the fluid, the fluid will be depressed

in the tube, and not rise to its hydrostatic or proper level. If the attraction of the particles of water for each other and for the glass be equal, the fluid will come precisely to its level; and if the attraction between the water and the glass be greater than between atoms of water, the water will rise steadily in the tube. This explains the law of *capillary* attraction and circulation.

A body, when acted on by an extraneous force, if brought into a smaller space, it is said to be *compressible;* if, when the pressure is removed, the body regains its original volume by the mutual repulsion of its own particles, it is said to be *elastic;* if, on the contrary, it remains compressed, it is called *inelastic.* In nature there are but few bodies perfectly elastic, and none which are perfectly inelastic. When the pressure is removed from the so-called inelastic solids, if they have been compressed, a slight expansion occurs; while in gases and liquids the return to the original volume is complete. Solids and liquids are so slightly compressible, that delicate tests are necessary to determine it. A pressure of 400 lbs. upon a square inch of water diminishes it the 1-1000 part. The compressibility and elasticity of gases are nearly perfect and uniform. Thus, air which under a weight of 20 lbs. occupies 100 cubic inches, is reduced in volume to 25 inches by increasing the pressure to 80 lbs.; and it expands to 400 cubic inches if the weight be reduced to 5 lbs. Barometers indicate variations in the weight of the atmosphere, caused, doubtless, partly by the rotation of the earth on its axis and by its course round the sun; and partly by clouds, winds, mountains, vapors, oceans, continents, &c. The essential differance between a barometer and a thermometer is, that the former has a column of mercury which is exposed to the air at its base, having, like a thermometer, a vacuum above the mercury. Hence, the least variation in the pressure of the air on the mercury in the little cup, causes it to rise or fall in the tube. In a thermometer, the mercury is hermetically sealed in the glass, and rises or falls as heat expands or cold contracts the liquid metal.

In some cases gases are brought within the cohesive forces of their particles, which modify their compressibility. Thus, if a tube full of air and a tube full of sulphurous acid gas be subjected to exactly the same pressure, the volumes will not diminish in the same degree when the pressure becomes high, but as follows:

The air as	1000	833	550	314
Sulphurous acid as	1000	851	554	301

In some other gases the same variation has been observed. (KANE.)

Some gases have been liquified by great pressure, and frozen by their sudden expansion when the pressure was taken off by giving vent. Other gases, such as oxygen, hydrogen, and nitrogen, have been subjected to a pressure of 800 atmospheres, equal to 12000 lbs. to the square inch, without causing any change in their natural elasticity, or other properties.

Heat may be regarded as an antagonist power to that of cohesion, and tends to render the molecules of a body repulsive to each other, and to separate them to greater distances than they had been before. When a solid, like salt or sugar, is dissolved in water, the phenomenon is explained by saying that the particles in the solid have a greater affinity for water than for each other. Hence, their previous cohesion is destroyed; they separate in the mass of liquid, which constitutes their solution, or the disappearance of the solid. Substances are *soluble* or *insoluble*, according as the force of solid or liquid cohesion, or attraction, prevails among their several atoms. Bodies insoluble in water, like resins, dissolve in other fluids, such as alcohol, ether, and Seneca oil.

CULTURE OF TOBACCO.

We are receiving many inquiries respecting the feasibility of raising tobacco in the northern and western States, and the best mode of culture adapted to this climate; and though we do not wish to see tobacco raised here as a common crop, feeling assured that it can not be adopted, except on farms contiguous to cities where a large supply of manure can easily be obtained, without ultimately materially injuring the soil; yet we will give the mode of treatment practiced by some who have successfully cultivated it here for a few years past. A dry, sandy loam produces the best *quality* of tobacco; and it is quality and early maturity rather than quantity that should be the aim of the grower.

The seed is first sown in beds, and the plants when about five inches high transplanted out into the field prepared for them. In the southern States, the seed beds are slightly charred or burnt previous to sowing, so as to destroy all the weeds. The beds should be in as warm a situation as possible. If manured with barn-yard manure, care should be taken to have it free from weeds, &c.; and we should prefer to use Peruvian guano or superphosphate of lime sown on the top of the bed or applied as a liquid manure. A table-spoonful of seed will sow a bed ten yards long and ten yards wide. It should be sown as early as the weather will permit. The plants make their appearance in about twenty days, and in six weeks after sowing they are ready to transplant into the field.

The soil should be pulverized to a good depth, and marked off in rows about thirty inches each way, and then the first showery weather the plants should be transplanted; and if any of them die, their places should be immediately filled up. We would suggest, for trial, the application of a tea-spoonful of superphosphate of lime placed below the plant when transplanted. From the magical effect of this manure on turneps, forcing them along during the first stages of their growth, and favoring early maturity, we think it will be a valuable manure for tobacco; the aim of the planter being not to raise a large gross crop, but a small one *perfectly elaborated*, containing a low percentage of ash. For this we believe superphosphate of lime will be found eminently useful.

The after treatment of tobacco is similar to that for the corn crop, the cultivator or horse-plow being kept continually at work as long as a weed is to be seen. The weeds close to the plant should be at first pulled by hand, and afterwards the hoe should be freely used. It is recommended to turn turkeys or other poultry into the field, to destroy insects and worms which sometimes utterly destroy the crop.

When the plant begins to put forth seed heads, which it will indicate by having two leaves of the same length, it should be topped either by hand or with a sharp knife. Shortly after topping it will begin to send out suckers, which must be constantly removed, as they take away much nutriment which is required by the leaves.

The time of harvesting will depend on the culture, soil, and climate. In this vicinity it is ready about the middle of September. It should be allowed to get fully ripe — the the riper the better, though there is great risk in letting it remain out too long, as any early frost may completely spoil it, or heavy rains do it much injury. It may be cut with a sharp knife, such as is used for cutting corn; the head of the plant laid towards the sun for a few hours, and then carried to the drying house.

If the farmer does not grow more than an acre or so, he will probably find room in the barn or some shed, in which to dry the tobacco. This he will best do by getting long poles, and placing them about a foot apart across the building, and to these hanging the tobacco plant by simply fastening the twine at one end of the pole and winding it around the whole length, thus binding the plants to the poles by the butt ends. The plants should not touch each other, and a free circulation of air must be allowed in the room.

If a large quantity of tobacco is grown, and the farmer intends making a business of it, it will be necessary to build a drying shed or room on purpose. The more airy this is

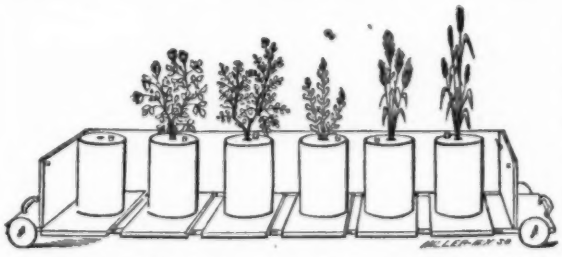
built the better, providing the rain is kept out. The size will of course depend on the number of acres cultivated; but it is better to have too much than too little room, as there is great danger of spoiling the crop if placed too thick in the drying room. When sufficiently dry the plants are taken down and the leaves stript off, laid in heaps about four feet high to *sweat* for a few days; they are then tied in bundles with a moist leaf, placed in boxes, and sent to market. Tobacco grown in Western New York, and treated in this way, is worth in New York about eight cents per pound. 1500 lbs. per acre is an average crop here.

We have said before it is an exhausting crop, and we should be sorry to see its cultivation extensively adopted by our farmers in the wheat growing districts. In several of the Western States this crop can be profitably cultivated, as the soil and climate is well adapted to its growth, and the cost of transportation *on the money value* is comparatively nothing to what it is on wheat and Indian corn; or, to make our meaning plain, it costs no more to transport 60 lbs. of tobacco than it does a bushel of corn, though one is worth $48 and the other 48 cents. The same reasoning applies to wool and pork, and everything of a high price, per weight or bulk.

AMOUNT OF WATER GIVEN OFF BY PLANTS DURING THEIR GROWTH.

Mr. Lawes has recently published the result of some experimental investigations of the source and fixation of the various constituents of plants, from which we make a few selections, especially in reference to the amount of water given off during their growth.

The plants taken for experiment were wheat, barley, beans, peas, and clover. The soil used was from a plot on which ten grain crops had been successively grown without having any manure supplied. There were three plants taken of each kind. One set of plants were without any manure; one set with mineral manures added; and one set with mineral manures and muriate of ammonia added. But we must confine our attention at this time to the unmanured ones. Glass jars 14 inches in depth and 9 inches in diameter, capable of holding 42 lbs of soil, were the vessels used. After the vessels were filled, plates of glass having a hole in the center about three-fourths of an inch in diameter in which to place the plant, and another near the side by which to supply the water when it was needed, the latter one being kept tightly corked except while the water was being applied, were cemented on the top of the jars, so as to prevent evaporation from the surface. The scales employed for weighing the plants were constructed on purpose for these experiments, and were calculated to turn with a third of a grain when loaded with from half a hundredweight to a hundredweight in each pan. Between the time of planting and the full growth of the plants more than twenty weighings were taken; and weighed quantities of water were supplied whenever required. The amount of water in the soil at the time of planting was determined by analysis. The jars were placed on a truck, so that they could be easily drawn into a green-house in case of a shower. The annexed cut will give an idea of the arrangement of the experiment. The empty jar is for the purpose of ascertaining the amount of evaporation through the center hole. The following table shows the amount of water supplied, derived from the soil, and given off by the



plants, during the entire period of their growth — 172 days — from March 19 to September 7. Quantities given in grains, (7000 grains make one pound.)

Description of Plant.	Total Water supplied.	Total Water obtained from Soil.	Total Water given off
Wheat,	79,800	33,727	113,527
Barley,	88,800	31,225	120,025
Beans,	87,800	24,431	112,231
Peas,	81,800	27,282	109,082
Clover, (cut June 28th,)	28,500	26,593	55,093

As has been stated, the jars were often weighed, so that the amount of water given off by the plants during the different periods of their growth could be ascertained. The following table gives the average daily loss of water (in grains) during stated periods of the experiment:

Description of Plant.	9 Days. From Mar. 19 to Mar. 28.	31 Days. From Mar. 28 to Apr. 28.	27 Days. From April 28 to May 25.	34 Days. From May 25 to June 28.	30 Days. From June 28 to July 28.	14 Days. From July 28 to Aug. 11.	27 Days. From Aug. 11 to Sept. 7.
Wheat,	14.3	40.9	162.4	1177.4	1595.3	1101.4	230.9
Barley,	14.3	60.2	445.5	1102.3	1592.0	1217.6	237.5
Beans,	9.7	59.8	179.5	885.6	1965.0	901.8	135.4
Peas,	11.2	42.9	106.4	1079.8	2092.7	377.2	..
Clover,	44.4	53.0	109.2	1473.5	..	..	..

As might have been anticipated, as the season advanced in temperature, and the mass and surface of the plants increased, the quantity of water daily given off was greater; yet towards the end of the experiment it rapidly and considerably diminished; and it is probable that the period of the most rapid circulation, as shown by the amount of water exhaled, was that of the greatest *accumulation* of materials in the plant; and that when the evaporation and apparent circulation diminished, the ripening and elaborating processes had commenced.

The clover plant was cut when in full bloom, July 28; the pea, August 11; the other plants, September 7th. The following table will give the total weight of dry matter, organic matter, and mineral matter or ash, in the plants. Quantities given in grains, &c.

Description of Plant.	Total Dry Matter. In grain.	Total Dry Matter. In straw and chaff.	Total Dry Matter. In total produce.	Organic Matter. In grain.	Organic Matter. In straw and chaff.	Organic Matter. In total produce.	Mineral Matter or Ash. In grain.	Mineral Matter or Ash. In straw and chaff.	Mineral Matter or Ash. In total produce.
Wheat,	148.5	310.4	458.9	144.3	278.2	422.4	4.22	32.27	36.49
Barley,	188.7	276.8	465.5	182.5	237.1	419.6	6.20	39.72	45.92
Beans,	282.6	254.9	537.5	273.6	214.9	488.5	9.02	40.00	49.02
Peas,	214.7	206.3	421.0	208.0	169.9	377.9	6.76	36.40	43.16
Clover,	..	..	204.7	..	..	175.5	..	..	29.24

The above table is of little independent interest. It shows that though the soil, previous to the commencement of the experiment, had been particularly exhausted of nitrogen by the growth and removal of ten grain crops without manure; yet with no manure of any kind supplied to the plants in the jars, the grains of the beans and peas, though highly nitrogenous, thrived better than those of wheat and barley. From this it may be inferred that the leguminous plants can and do obtain their large amount of nitrogen from the atmosphere, but that the cereals wheat, barley, &c., are dependent on a supply of nitrogen in the soil. This, too, is consistent with the results of extensive experiments in the field on wheat and beans, the former being greatly benefited by the application of nitrogenous manures, while the latter and other plants of the same botanic order are *not* benefitted.

The following table will show the amount of water given off for *one grain* of dry matter, organic matter, and mineral matter, fixed in the plant:

Description of Plant.	No. of grains of water given off for one grain fixed in the plant, of—		
	Dry Matter		Mineral Matter (Ash).
	Inclusive of Ash.	Organic only.	
Wheat,	247.4	268.8	3111.2
Barley,	257.8	286.0	2613.8
Beans,	208.8	229.7	2389.5
Peas,	259.1	288.7	2927.3
Clover,	269.1	314.0	1884.2

The organic matter was probably derived principally from the water and atmosphere, 268 grains of water being necessary to supply one grain of organic matter in the wheat plant, while in the bean but 229 is used. This would also indicate that the bean possesses the power of abstracting from the atmosphere more of its organic elements than the wheat plant. It is seen that for one grain of mineral matter organized, from 2000 to 3000 grains of water are passed through the plant. This affords evidence sufficient to show that few of the substances usually considered insoluble are incapable of being taken up by the plant in a sufficient quantity of rain water. These figures, when calculated to the acreage yield of wheat, clover, &c., afford some interesting facts. Thus, an acre of wheat of thirty bushels grain and an equal weight of straw would exhale during the spring and summer 355¼ tons of water; or, calculated on 173 days, the duration of the experiment, 4,111 lbs. per day. An acre of clover that would make two tons of hay, would pass off through its leaves in 101 days 430 tons, or 8,600 lbs. per day; and this besides evaporation from the soil, which is doubtless great, especially in the case of wheat. The annual fall of rain in different parts of the United States, is from 30 to 40 inches. An acre of water one inch deep would weigh 120 tons. If 30 inches fall in a year, it would be on an average 19,700 lbs. per day per acre. As most rain falls when least required by the plants, the above figures are a potent argument in favor of thorough under-draining, to carry off this immense amount of superfluous water, as well as that arising from springs, which is equally pernicious to the growth of plants.

FLAX CULTURE.

THERE is much discussion in Great Britain at the present time, as to the necessity of paying $45,000,000 to foreigners for Flax, when their own climate is equally adapted to its growth as that of Belgium and other European countries. It is said that when wheat was from $3 to $4 per bushel, land that was not well adapted to its growth was sown, and though the yield was small, yet, from the high prices obtained, it was profitable to grow it. But now, when wheat is but $1 per bushel, this land can no longer be cultivated with wheat without *serious loss*. What, therefore, shall be done with it? The reply of many intelligent practical farmers is, "cultivate oats, peas, beans, turneps, and flax;" and there can be no doubt that if free trade continues, which it undoubtedly will, a much smaller area of wheat will be sown in future in England. The same thing is true in relation to France. Free trade with England promised high prices for the surplus wheat and a large breadth of land was sown in consequence; but prices are so low that wheat culture in France is anything but a profitable business and will not be so extensive as in the last few years. We therefore predict somewhat higher prices for the future.

At the Penrith Farmers' Club, Mr. ROME, a practical farmer who has been engaged in the culture of Flax for some time, gave a lecture on the subject from which we will make a few extracts:

"The value of a crop of Flax, standing in a field, is from $40 to $60 an acre—the purchaser to pull the Flax. The yield of Flax will vary from 30 cwt. to 40 cwt. per acre; the produce of seed about sixteen bushels. The price of the Flax, after threshing out the seed, $14 to $15 per ton.

"SOILS.—The flax crop may be grown with advantage on all moderately cohesive soils, resting on a sound clay subsoil, providing the land is naturally dry, or thoroughly drained; but gravels or very light soils, or lands upon a weak tilly subsoil, are not suited to its growth.

"ROTATION.—Flax will succeed best after Clover sod, or Oat stubble properly prepared on good land; and after a white crop following a green crop, or after potatoes or bare fallow on inferior land.

"PREPARATION OF SOIL.—Deep plowing in early autumn by one plow following another in the same furrow, is necessary to the success of the crop under all circumstances, (except when the land has been previously subsoiled), to break the crust or pan formed below the surface soil, so as to allow the roots of the Flax and the surface water to go freely down; a second furrow will in some cases be necessary in Spring before sowing, but generally running through the soil with the cultivator will be found preferable. Dry lands should be laid into flats, but cold ground ought to be plowed into twelve feet ridges, very slightly raised in the centre; the manure should then be applied, the land well harowed and rolled, the seed sown on the rolled surface and harrowed in with light seed harrows, taking care to keep the horses as much off the ridges as possible on cold land. It is very desirable that the ground selected for flax should be perfectly clean to begin with.

"MANURE.—Superphosphate of lime, at the rate of four bushels per acre, has proved to be the most suitable manure for the flax crop. Guano raises a soft inferior fibre and injures the crop; and farm-yard manure is not approved of. The crop is found to derive most of its nourishment from the atmosphere and the subsoil.

"SEED.—The best seed is Riga, or the produce of this country, grown from Riga seed the previous year. Great care is necessary in the selection of the seed, so as to get it plump and heavy, and clear of the seeds of weeds. The seed should be sown at the rate of three imperial bushels on good land, and 2½ imperial bushels per acre on inferior land, as soon after the 20th March as the land can be got into proper order, and the weather will permit, but not later than the 20th April. Great care should be taken that the seed is distributed evenly over the surface. It is not desirable to sow grass with the flax crop, as it usually injures the fibre of the flax unless sown after the crop has been weeded. A crop of rape may be taken after flax with great advantage on good land, the same year, and the ground sown down with grass seed if desirable.

"WEEDING.—If clean land has been selected for the crop, and plowed early in the autumn and exposed to the winter frosts, few weeds will generally appear, if the seed used be thoroughly cleaned; but if there be any, they must be carefully pulled. This operation is best done by boys and girls properly superintended. It is necessary that they should always work facing the wind.

"PULLING.—The crop is ready for pulling when the seed in the boles is beginning to change from a green to a pale brown color, and the stalk becomes yellow for about two-thirds of its height from the ground; this is rather a nice point to determine and requires attention, as pulling too soon or allowing the crop to get too ripe are both injurious to the fibre. In pulling, it is necessary to clean the flax from all weeds (if any) to pull it when perfectly dry, to keep the root ends even, and tie it up in small sheaves to be stooked up and stacked when perfectly dry and thoroughly winned, which will be in the course of eight or ten days after pulling."

Some have thought the flax crop an exhausting one, but it is not considered so either by farmers who have cultivated it or by agricultural chemists. Dr. ANDERSON, chemist to the Highland Agricultural Society, states, it is scarcely possible that the flax crop should produce greater exhaustion than a grain crop, certainly not greater than wheat; if a portion of linseed or oil-cake is consumed on the farm, we should have less exhaustion than from a grain crop. Mr. BRISCO and Mr. BARKER have both sown clover and grass seeds with flax and other grain crops—the ground occupied by the flax producing double the eatage in the following autumn of that produced where grain crops were sown, while the grass on the ground still remains superior.

Mr. C. BEDELL, Berlin, Mahoning Co., Ohio, writes us his method of raising flax, and the one usually adopted in Northern Ohio. "If on sod ground, plow *very deep* in the spring, as early as frost will allow; harrow well till it is mellow; then sow about three pecks of seed per acre, and drag it lightly. We think three pecks little enough on sod ground, but less might do on corn stubble or fallow. It is less labor, covers the ground from the scorching rays of the sun, and leaves the soil in a better preparation for wheat

than the old plan of summer-fallowing. We get on an average 10 bu. seed and 400 lbs. of dressed flax per acre. The seed sells here for $1.25 per bu., and the flax for 7 cts. per lb. So that a crop yields us $40.50 per acre. Some seasons, if the soil is well prepared, we get 16 bu. per acre, and 600 to 700 lbs. of dressed flax. I do not think it impoverishes the land so much as a barley or an oat crop."

SPRING AND SUMMER WORK.

THE intelligent farmer will have all his plans of culture for the succeeding year formed in his mind the autumn beforehand. During the winter he will reflect upon them, and use every means to increase his knowledge; so that he may perform all his operations with facility and economy. He will also make and repair many of his implements, and get everything ready for spring; so that when it comes he can avail himself of the first opportunity to commence operations. The shortness of our *working season* renders this forecast doubly necessary and advantageous.

Barley is a crop which has paid very well for the last few years, and the demand is increasing; so that we may expect good prices for the future. Light, dry, sandy loam, is best adapted for this crop. If the soil is rich, it may be sown after wheat; the earlier the better, providing the soil is dry enough to work well. Two bushels of seed to the acre is usually sown, though we think two and a half, and in some instances, three bushels, is none too much. The land should always be rolled after it is sown. If not in good condition before, it will do to roll when the barley is an inch or two out of the ground. To insure a good crop, it should always be sown the first or second week in April.

Oats should be sown as soon after the barley as possible. They will grow on almost any kind of soil, from a stiff clay to a black muck. The heavy land, however, yields the heaviest weight per bushel. Two to three bushels of seed are generally sown per acre. Sixty bushels per acre is a *good* crop, and is not often though sometimes obtained. There is an opinion, in some districts, that oats are an exhausting crop, and that wheat does not do well after them. We are inclined to think this view erroneous. They should be cradled and *tied up*, as they are apt to shed much if loose. One and a half bushels of oats, half a bushel of barley, and a peck of gray peas, are often sown together per acre in England. The produce is very large, and when ground, forms an excellent food for horses in the spring.

Indian Corn is, of all the cereals, best adapted to this climate; and on the rich lands of the great west, is raised in large quantities with little labor, excepting planting and harvesting. In New York and the eastern States, however, it is absolutely necessary to have the soil well and deeply pulverized, and in many instances well manured, and also hand-hoed twice or thrice, to insure a large crop. In this district it is usually planted about the middle of May. It should be marked *each way*, three feet apart, as it is then planted straighter and is much more easily horse-hoed, plowed, &c. It delights in a light, gravelly loam, and does best on an old meadow or clover ley plowed the previous fall. Barn manure is always gratefully received and handsomely remunerated. Four to six grains are planted in a hill. When the corn is up about an inch it should be dressed with plaster—a good handful to a hill. Its good effect is speedily visible. Wood ashes applied in the same way is often attended with good profit.

Potatoes, till within the last few years, were considered one of the safest crops—never being attacked by insects or injured by disease; but the "potato disease," which has extended to all countries, defies conjecture to account for it, and science to provide a remedy. A well drained, light, black soil, if well manured, is best calculated to produce a heavy crop. But a dry, light, sandy soil, *now* yields the soundest and most palatable

potatoes. Subsoiling for this crop has been attended with great benefit. Good, short *hog* manure is the best for potatoes. A handful of plaster on a hill, as they just break the soil, is also beneficial; and unleached wood ashes are of great benefit. Two hundred bushels per acre ought always to be raised. They should be planted about the first of May. If planted in hills they are more easily kept clean; though planted in rows about thirty inches apart and twelve inches between the setts, will perhaps yield the heaviest crop. 300 lbs. of Peruvian guano sown broadcast per acre, and plowed in, has been attended with very good results on this crop.

Carrots.—The value of this crop, especially as a food for horses, has long been acknowledged, and farmers in various parts of the country are now beginning to grow an acre or so for their own use, satisfied that while they require some extra labor to the oat crop, yet the yield is so very large as to make them much more profitable. They do very well on an old meadow or clover sod well manured, plowed in the spring, well dragged the way of the furrows, till the grass is well covered and there is an inch or two of fine, loose mold. They should be sown in rows one foot apart, as they are then more easily kept clean by hoeing. Three to four pounds of seed are sufficient for an acre. About the middle of April, if the soil is dry and warm, is the best time for sowing. Six hundred bushels per acre is often obtained, and some farmers consider a bushel of carrots equal to a bushel of oats as feed for horses.

Mangel Wurzel.—Though this root contains about 87 per cent. of water, yet more nutritive matter can be obtained per acre from this crop than any other. It is not liable to be injured by insects, and is not so susceptible of injury from drouth as ruta baga and other varieties of turneps. Land for this crop should be well drained, exceedingly rich, and plowed very deep. To insure a good crop of thirty tons per acre bulb and ten tons leaf, the land should be plowed in the fall after wheat; and if subsoiled, so much the better. In the spring, twenty loads of good barn-yard manure should be plowed in, and the land well pulverized by dragging, &c. It may then be marked out in rows two and a half feet apart, and the seed be dropped in the rows at distances of 12 to 14 inches, with 4 or 5 seeds in a hill. We would also earnestly advise that 500 lbs. superphosphate of lime (directions for the manufacture of which from bones, by sulphuric acid, will be found in our January number, page 37,) be applied per acre; this would be about *half an ounce* to a hill. Its effect, especially in giving the plants a start, is greatly beneficial, and we recommend farmers always to use it if possible. It may be purchased, or manufactured from bones, as best suits convenience. For carrots, beets, parsneps, and mangel wurzel, this substance is a great auxiliary; and for ruta baga and turneps, is the best manure that can possibly be used, costing about $4 per acre. Mangel wurzel should be sown the first week in June. They should be kept clean by means of a horse-hoe between the rows, and the plants must be singled out, leaving one in a hill. It is necessary to sow several seeds in a hill to insure an even crop. When pulled in the fall, the *leaves* should be given to milch cows, as they will make them give much more milk. The roots should be stored in the barn or cellar, for winter or *early spring* feed. They will keep perfectly good till midsummer, if necessary. They are an admirable food for sheep or milch cows, in conjunction with hay or straw.

Ruta Baga, or, as it is called in Britain, the *Swedish turnep*, where there are a number of varieties very extensively grown, does not necessarily require such rich land as the mangel wurzel; neither can such a large crop be grown. They also contain a little more water, and will not keep good so late in the spring. They are nevertheless a highly valuable and profitably cultivated crop; and for sheep, and cattle, and hogs, there is nothing better. The *Skirving's Liverpool Swede* is probably the best kind for this climate, as it is not so liable to run to seed as some others, though there are many other good varieties. In England, one and a half pounds of seed are sown per acre—*drilled* on ridges two feet apart, and afterwards hoed out twelve inches between each

plant. But as drills have not come into general use, the seed might be sown in the way recommended for mangel wurzel. And be sure you don't forget to use the superphosphate of lime, applied as in the case of mangel wurzel; and then, if the soil is a light loam well plowed and drained, and the plants are kept clean, we will warrant you 600 bushels per acre, if the season is at all favorable; and we should not be surprized if you write to inform us that you had 1800.

Clover.—About ten pounds of clean clover seed is usually sown per acre, in April, on the wheat fields. It should always be rolled or harrowed in, if possible. In England, clover is usually sown with the barley crop. Red clover, as found by experience, can not there be grown oftener than once in eight years on the same soil; for if sown once in four years, the land soon becomes "clover sick." Twenty pounds of seed per acre is often sown by good farmers, in hopes of securing a crop. We have seen much heavier crops of clover grown here by the use of plaster, than we ever saw in England under the most favorable conditions of soil and manuring. Clover is often much injured by keeping sheep on it too late in the fall and too early in the spring; and it is better not to let them run on it at all in the fall, if it can be avoided. We would never let land lie with clover more than two years, as after two years there is little extension of root, and the clover is apt to die out and give place to timothy and red top, which we think as exhausting to the soil as wheat, and should never be sown except on low land not well adapted for wheat. It is to the extension of the quantity of land sown with clover and the adoption of root culture, that we confidently look for great improvement in our agriculture and increased profits of the farmers, and, as a consequence, of the entire community.

AGRICULTURAL PROGRESS OF THE UNITED STATES.—The following letter, addressed to the editors of the *National Intelligencer*, Washington, and published in that Journal, contains facts interesting to the American people:

TO THE EDITORS OF THE NATIONAL INTELLIGENCER:—The statistics of Agriculture, so far as they have been published from the Census Office, disclose many instructive facts. To promote the farming interest, and bring some of the most prominent features of this branch of national industry under the eye of legislators and statesmen, I respectfully solicit a small space in your paper to call attention to the progress made by a nation of farmers.

Maize is the most important crop grown in the United States. It is one of the staples of every State and Territory, not excepting Oregon, whose climate is least friendly to this American cereal. The United States census of 1840 makes the corn crop of the year preceding 377,531,875 bushels. The census of 1850 shows that the crop of 1849 was 591,586,053. Increase 214,054,178 bushels. These figures indicate a gain of fifty-seven per cent.; while the increase of population was not far from thirty-four per cent. Corn being one of the most profitable crops grown any where, I have studied its increase and decrease in the several States with much interest; but a due respect for the numerous claims upon your columns forbids an extended notice of even the most abundant and remunerating product of our national industry. Allow me, however, to say that New York produced in 1839, 10,972,286 bushels; and in 1849, 17,944,808 bushels. This, for an old State whose rural population increased but little in the last decade, is a large and creditable gain. It is one of the many good fruits of her excellent agricultural societies, known all over this extended Republic, as well as in Europe.

Pennsylvania has advanced her corn culture considerably, although less than New York. Her crop in 1839 was 14,240,022 bushels; in 1849 it was 19,707,702. Gain 5,467,680 bushels. She will do better in the present decade.

Georgia has sustained an agricultural journal for the last nine years, and a flourishing State Society and others some five years. Her corn crop in 1839 was 20,905,122 bushels; in 1849 it was 30,428,540. While Georgia has added to her annual harvest of maize 9,523,418 bu. in ten years, South Carolina has increased hers only 1,549,503 bushels.

Ohio has SEVENTY well-organized agricultural societies, and an efficient Board of Agriculture. Her corn crop in 1839 was 33,668,144 bushels; in 1849, it was 58,922,783. Gain in ten years, 25,354,639 bushels.

These official statistics speak volumes in favor of agricultural societies, and legislative aid for their support. They are composed of practical reading farmers; and I am happy that men of this stamp

are making an earnest effort to organize a national agricultural society. Should they, in its feeble infancy, ask for a little assistance from Congress, it is to be hoped that such small aid as State Legislatures grant to State societies will not be withheld. To say nothing of the large increase in her grain crops, New York, by giving some forty-five societies less than $8,000 a year, has increased the products of her dairies over fifty per cent. The recent census shows the immense product of over *eighty-two million pounds of butter* (82,043,823 pounds.) Cheese 49,785,905 pounds. In the production of these articles the gain from buttermilk and whey in pork making amounts to millions of dollars.

Unlike the farmers of New York and Ohio, those of Virginia have failed to discover the advantage of *united* efforts for the promotion of agriculture. In 1839 the corn crop of Virginia was 34,577,591 bushels; in 1849 it was only 35,538,582. Gain in ten years but 960,991 bushels.

With a view to correct what I cannot but regard as an erroneous judgment in that noble Commonwealth, I state the fact that from no other State in the Union has opposition been seen or felt to a national agricultural society. Intelligent business men combine their efforts and means to advance commercial, manufacturing, banking, railroad, and educational interests; and why should not farmers unite their wisdom and labors to promote improvements in tillage and husbandry? The science of combinations is as applicable to agriculture as to any other business pursuit whatever. Isolated cultivators of the earth may increase their knowledge and improve their farming operations a very little in the lifetime of a generation, but their progress will be so far exceeded by such as skilfully combine their individual powers that the former will appear to retrogade, not advance.

Agricultural improvement has taken deep root in the soil of Maryland, and her corn and wheat crops have increased faster than her population in the last decade, including the large gain in the city of Baltimore. There is reason to believe that these staples will be doubled, without any increase of tilled land, by the year 1860, if the Legislature of that State foster the plan of its State Society to establish and maintain an agricultural college and experimental farm. DANIEL LEE.

Sheep.—I send you an account of my sheep, not thinking to excel many of my brother wool-growers, but with a wish that it may stimulate some others to pay more attention to more judicious breeding and keeping. I had 76 sheep sheared last June, which produced 406 pounds of wool, which sold for 44½ cents per pound. From 44 ewes I raised 47 lambs, which sole for $1.50 per head. I commenced about the year 1816, with a cross by a full blood merino buck with our native ewes. I have never sold off my flock, but have tried to improve it by selecting good bucks and my best ewes to breed from. Thomas Redway.—*Amber, N. Y.*

To Relieve Choked Cattle.—J. Y. De Baum, of Spring Valley, N. Y., gives the following method of relieving choked cattle: "Tie the animal's head pretty high; take hold of the tongue with the left hand, and with the right take a leathern trace (the forward end ahead) and run it down fearlessly. The remedy is easy and always at hand, and will perhaps save your animal, while you might lose it in going after a doctor."

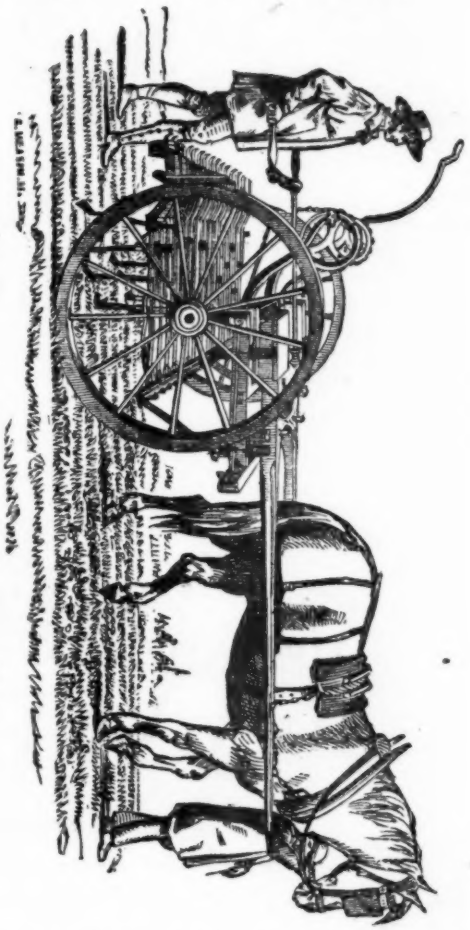
Butter Making.—A subscriber, of Borodino, N. Y., informs us that he has 2 cows, 6 and 7 years old, a cross of Devon, Durham, and Native breeds, which have the last summer given in 7 months 551 lbs. of butter; from May 21 to June 21, 146 lbs.; from May 27 to June 4, 37 lbs. This, he says, is a specimen of the cows in that section.

AGRICULTURAL IMPLEMENTS AT THE GREAT EXHIBITION.

BY P. BARRY, FROM NOTES TAKEN AT THE WORLD'S FAIR.

The old system of *broadcast* sowing of seeds is fast giving way in Great Britain to what is called *drilling*, which is a system of sowing in regular and equi-distant rows. This system is said to have been introduced by the celebrated Jethro Tull in the early part of the present century, not on account of its own merits, but in order to admit of hoe tillage such as is now practised very extensively in England by horse hoes. For a long time it met with great opposition, and in general, until more recently, met with very little favor. As things advanced, its merits became better understood, and, with implements of certain and efficient execution, it is becoming almost universally adopted. In

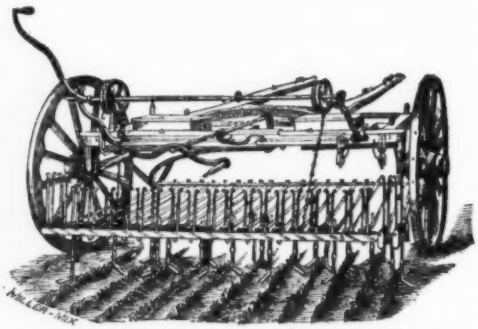
this country it is also attracting attention, wheat being now mostly sown with planters or drilling implements. The advantages claimed for it are, that the seed is deposited in the earth with greater exactness in regard to *depth*, regularity, and proportion; economy of seed, in giving it a good hold of the ground in light soils so as to protect it against being drawn out by frosts or loosened by the wind when it has advanced to a heavy top growth; lastly, in admitting of hoe culture, by which the growth of the plants may be stimulated and the growth of weeds prevented. It is perhaps doubtful whether hoeing will ever be applied to growing grain crops in this country to any considerable extent. Where the soil is good, and well prepared previous to sowing, there is little chance for weeds to grow and little need of culture. It *may* be otherwise; our farmers must consider it. If this system be adopted, the drilling machines or planters must pass over the ground in straight not in zigzag lines, as we generally see over the country. At any rate, this would be a great improvement on our general culture; for nothing can well look more slovenly than curved furrows, fresh drag lines, and young growing crops. I abhor crooked plowing, dragging, and every crooked, careless operation on the land. A man who can not run a straight furrow, or drive his harrow or planter straight, ought to feel ashamed of his awkwardness.



GARRETT'S PATENT HORSE-HOE.—SIDE VIEW. Fig. 1.

But whether grain crops be ever horse-hoed or not, root crops will; and as their culture is becoming extensive and important, a glance at the most approved English implement may not be uninteresting. The best which I have observed in the exhibition, and one which is offered for sale in all the implement shops, and generally in use, and to which a prize medal has been awarded, is

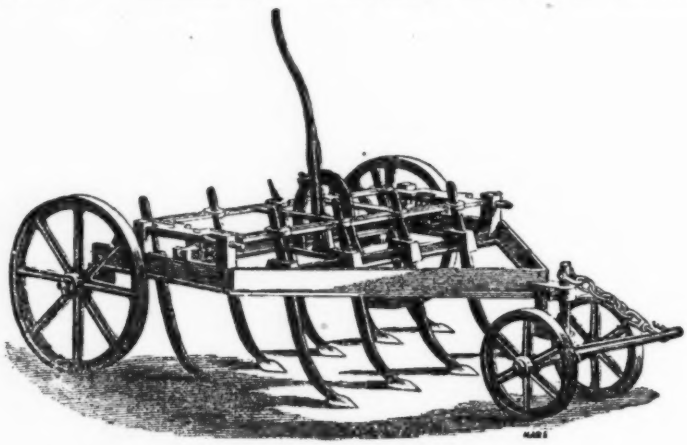
Garrett's Patent Horse-Hoe.—Fig. 1 is a side view of the machine at work, and fig. 2 gives an end view, showing the manner in which the hoes pass between the rows. It is so constructed that the shafts for the horse can be fixed upon any part of the frame, and the axle-tree being moveable at both ends, it can be expanded or contracted at pleasure to suit all lands and methods of planting. Each hoe works on a lever independent of the others, and this adapts them to all inequalities of the ground, and the hoes can also be set to any width from seven inches to thirty. The hoes are set to any



GARRETT'S HORSE-HOE. — END VIEW. Fig. 2.

particular angle by means of the crank which stands up on the left hand side of fig. 2; this is attached by chains to the jointed irons on which the levers and hoes are suspended. There is also a swing steerage to guide it exactly, as shown in fig. 1. One of these which I saw intended for seven rows, weighed 750 lbs., and cost £15. There are other sizes up to eleven rows, costing £20, ($100.) It is said that a horse, a man, and boy can hoe ten acres per day at a cost of 6*d.* to 1*s.* English per acre. The cutting blades are made of steel, and attached by screw bolts and nuts to the stalks that connect them with the levers. The whole affair is simple, and easily arranged by any workman.

The Patent Drag, Harrow, and Scarifier. — Here is an implement which our farmers may compare with their cultivators in use for preparing land for wheat and other crops. It strikes me as a most effective contrivance, and considering its weight and power, easily drawn. It moves on four wheels, as will be seen from the cut; and instead of handles like a plow, as ours generally have, it is controlled as to depth of tillage by a lever, seen on the top. The manufacturer says: "The principal novelty in this invention is the



PATENT DRAG, HARROW, AND SCARIFIER. Fig. 3.

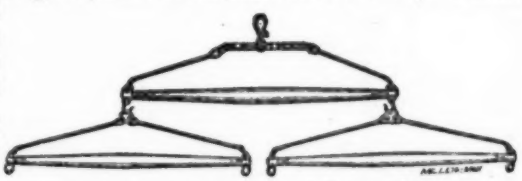
frame at the top, suspended about six inches above the lower frame, parallel with which, by means of a lever, it is moved backwards and forwards. This simple and easy movement regulates the depth of the tines or prongs in the soil; and as the implement does not require lifting, (the frame of which is at all times the same height from the ground,) all that is necessary to alter the depth of penetration is, a slight movement of the lever above referred to, which changes the inclination of the tines. It will be found to answer all the purposes of harrowing weeds and rubbish from the most foul lands; most efficient for opening, raising, and pulverising the soil; and as blades of different widths are made to fit the tines, it may be used with great advantage as a skim to take off the couch, &c.

There are some late improvements in its construction, by R. GARRETT & SON, which consist in substituting wrought iron instead of cast iron for the tines, without any extra cost, whereby the liability to breakage is entirely obviated; and in the application of a lever to each side of the scarifier, so that either traveling-wheel may be raised or depressed higher or lower than the other, to suit sloping grounds, and to cause the teeth to penetrate a uniform depth in the land; and this alteration may be effected while the implement is proceeding in its work.

"*Nett Prices, with one set of Tines or Prongs.*—Three feet six inches wide, with five prongs, £7; four feet six inches wide, with seven prongs, £9 10*s.*; six feet wide, with nine prongs, with side levers, £12; ditto, with wrought iron frame, £18. Points, 8*s.* per dozen. Blades, 4-inch, 10*s.*; 6-inch, 11*s.*; 9-inch, 12*s.* per dozen."

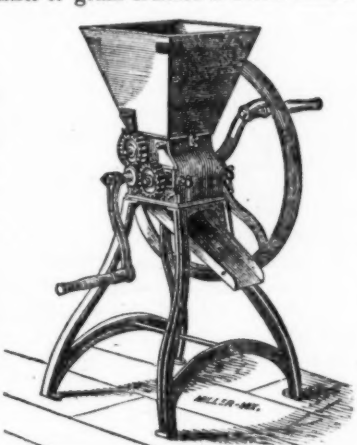
I annex the prices to show the cost compared with that of the American implements. This machine is somewhat similar to *Hyde's Cultivator*, manufactured in this State.

Improved or Patent Trussed Whiffle-trees.—The difference between these, and those in general use, is fully explained by the annexed drawing, (fig. 4.) They combine great strength with lightness. The additional strength which the trussing gives, admits of the other part being much lighter; while breaking, under any ordinary circumstances, must be out of the question. The truss is a light iron rod. This is called in England, "Harding's principle."



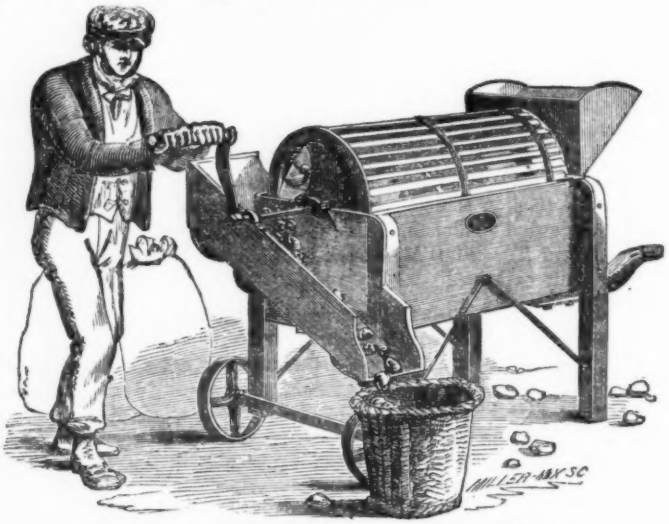
PATENT TRUSSED WHIFFLE-TREES. Fig. 4.

Grain Crusher.—This is an implement or machine of great importance. Few people in this country seem to be aware of the advantages of crushing corn or oats before feeding them to horses. Economy alone should induce their general adoption. I know from experience that for a working horse half a bushel of grain crushed is better than a bushel in its whole state. It requires considerable muscular power to properly masticate hard corn or oats, and hence it is that the manure heap shows such a large portion of it entirely whole and fit for growth. I think a good article of this kind at a moderate price would be a great desideratum to farmers. I have heard SINCLAIR'S spoken of, but I do not know how good it is. The annexed cut represents one of the best, simplest, and cheapest, I observed in England. This mill is fixed on a cast iron frame. In the lower part of the frame are two case hardened and slightly grooved rollers; these are adapted for malt, oats, and linseed, which they bruise to any required fineness admirably; the bean roller above acting as a feed all the time, Above this pair is a coarsely grooved roller. working against a plate, which hangs independently of the frame, and is set up to the roller or drawn back by the regulator screw; this roller is intended for beans, peas, and Indian corn, which it splits in the best manner. When using it for the latter purpose, of course the screws which regulate the lower rollers must be turned back, to separate and throw them out of gear. The hopper falls back upon a hinge, to enable the person using to set the rollers, or see if there is any derangement.



GRAIN CRUSHER. Fig. 5.

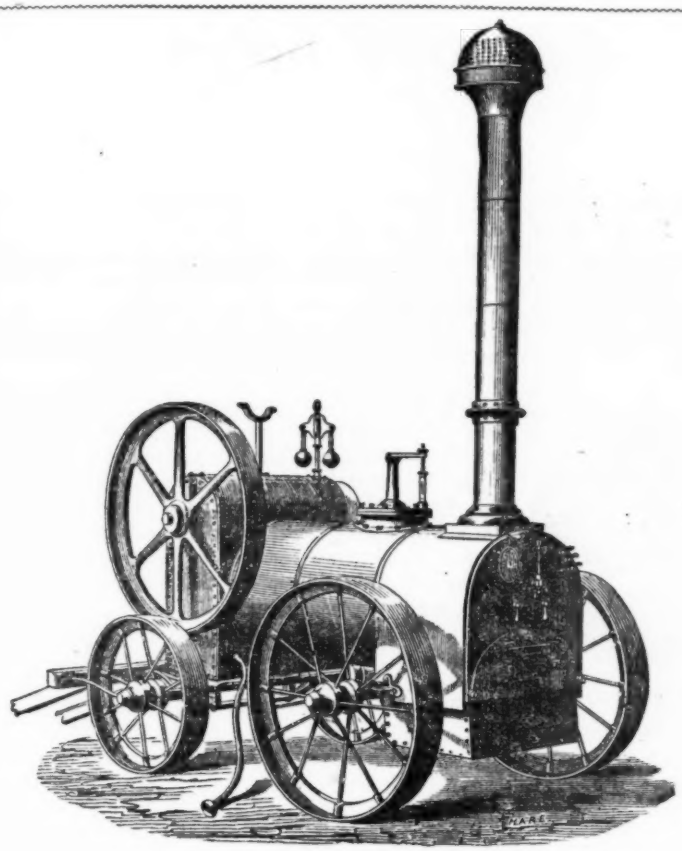
Price—£5 15*s.* 6*d.*; mill for crushing oats, &c. only, £5 5*s.*; mill for crushing beans only, £3 to £4; mill for crushing linseed only, £5 to £6. All these mills may be had of a larger size, for horse or steam power, if required.



CROSKILL'S ARCHIMEDEAN ROOT-WASHER. Fig. 6.

Croskill's Archimedian Root-washer.—Fig. 6 represents this very useful machine. Where roots are fed to cattle or horses, it is very important that they should be perfectly clean; and where large quantities are consumed, washing in the ordinary way is a tedious and laborious process. In this "Archimedean" washer the roots are delivered into a hopper, and pass thence in an inclined cylinder having two chambers. In the first they are confined and washed by turning the handle in one direction; then by turning the handly round the other way, they pass into the second chamber, which is constructed in a spiral form, along which they pass and drop into a spout outside. This costs in England, $17.50.

Steam Engines for the Farm.—Steam is *the* wonderful power of the age. Wonderful in the tremendous force it creates, and in the vast diversity of operations which it is capable of performing at one and the same time with the utmost attainable accuracy. "It can not only in one mill turn a lathe, and in another weave a stocking—in one hammer circular bars of iron, and in another dress a piece of broadcloth; but the same engine can, by the machinery which it drives in the same building, if necessary, hammer, and cut, and file, and turn—can spin, and weave, and dress—can, in fact, take the raw material at one end of the building, and by one single original motion feed itself with coke and water, which itself pumps up, move the machine which takes in the wool, transfer it to the other machines ready for its manufacture, and bring it out broadcloth ready for the tailor. Of such a power as this may not the agriculturist avail himself to carry on his multifarious operations? Why may he not thresh, and plow, and sow, and roll, and harrow, and mow, and stack, by a power which accomplishes for the manufacturer processes far more difficult?" And steam engines really are at this moment used by extensive cultivators to a very considerable extent, and in the great exhibition the large number of engines for farm purposes exhibited, furnish a striking proof that their use has passed beyond the bounds of theory. I have seen several in operation on



STEAM ENGINE FOR THE FARM. Fig. 7.

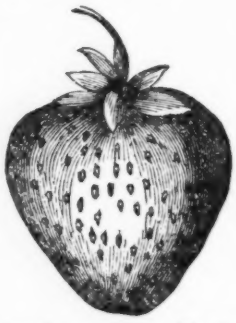
farms, and one in an extensive nursery used to pump all the water, cut and crush feed for horses, saw wood, clean seeds, and perform a vast deal of labor. The proprietor said that he had begun to look upon it as one of the most indispensable things about his establishment. Already have some pretty successful attempts been made at plowing; but in this and all other operations on the land, the difficulty to overcome will be to have them move without sinking. But in the barn-yard, if their uses never go beyond, they must be of great service in all large establishments. There is something exceedingly practical and manageable in the appearance of the nice portable engines here exhibited, capable of being drawn by a pair of horses and managed by any laborer after two or three days practice. The usual price for a four-horse power engine on wheels, is $700 to $750; of six-horse power, $800 to $850. At our last State Fair a *Portable Farm Engine* was exhibited by the manufacturers, HOARD & BRADFORD, of Watertown, N. Y. We learn that the price is, for half-horse power, $75; one-horse power, $100; two-horse power, $160; three-horse power, $250. The principal objections to the use of steam engines on the farm, are—difficulty of management, liability to explosion, and danger of fire. These objections the manufacturer states he has endeavored to obviate, but how successfully we can not at present say.

Horticultural Department.

CONDUCTED BY P. BARRY.

STRAWBERRIES.

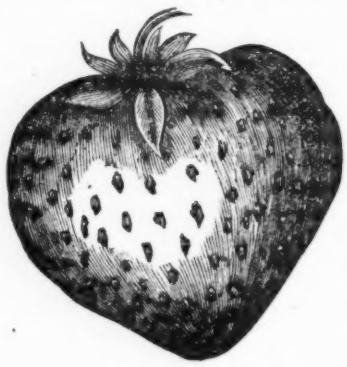
THE strawberry is a fruit that almost every man who has a garden cultivates to some extent. No section of the country is so cold or so warm as to render its successful culture impossible, or even difficult. It is a fruit, too, that requires comparatively a small space—a couple of rods of ground being sufficient for a small family. It also yields immediate returns—the plantation of this season giving a full crop next. It requires good culture and treatment; but this is so simple and so easily given, that it is beyond no man's reach. Great attention has been given to this fruit within a few years. The value of varieties has been well tested, and multitudes of experiments have been made in its cultivation, so that cultivators have all necessary information within their reach. The horticultural periodicals abound with instructions as to how, and when, and what to plant; but for the benefit of those who may not have had opportunities of seeing these, we will briefly point out the substance of what we conceive to be the proper course for beginners. We will suppose that a strawberry plantation is to be made the ensuing spring.



BURR'S NEW PINE. Fig. 1.

1st. The ground (if not done last autumn) must be trenched eighteen inches or two feet deep, as soon as it is dry enough to work, turning in a liberal supply of old well decomposed manure—say at least a cart load to a square rod. When the ground has been trenched thus, it should all be turned over again, so as to pulverize it and mix well all parts of the soil and manure. When this is done, rake off and level the surface, and it will be ready for the plants.

2d. Procure good, strong, well rooted runners, or transplanted runners of last season. Plant in rows, say three feet apart, the plants eighteen inches apart in the rows, for all the sorts with large foliage; the wood strawberries (*Alpines,*) may be six inches closer.

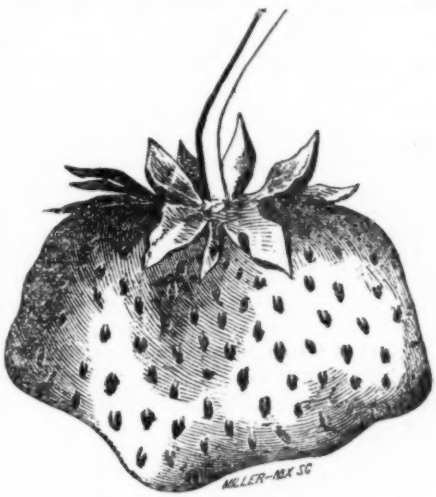


HOVEY'S SEEDLING. Fig. 2.

3d. Keep the ground clean and well hoed as an onion bed all summer, and cut off all runners as fast as they appear, unless wanted to increase the variety, and then only two or three should be allowed on each plant. In the autumn the plants will be luxuriant and large, covering half the ground, and in a fine condition to give a good crop next season. In dry seasons, mulching with a little tan bark, saw-dust, or old manure, will assist their growth very much.

4th. WINTERING.—In many districts no winter protection is needed, but as a general thing a coat of three or four inches deep of straw or leaves, protecting the plants against the thawing and freezing of winter, is found very useful, greatly augmenting the vigor and productiveness of the plantation the following season. We always do it here at Rochester.

5th. Treatment of the Plants during the Bearing Season.—Attend to the culture of the soil as on the first season, keeping it clean and friable; keep down runners; and provide for a liberal supply of water in case of drouth. The greatest drawback in strawberry culture, with us, is dry weather at the time of the swelling of the fruit; and if we want them *large*, we must apply water *freely*—let it flow over the plants in torrents three or four times a week. Weak liquid manure, occasionally, will be a great aid in giving size. The result of all our observations at home and abroad, in regard to strawberry culture, is, that great size and heavy crops can only be obtained by a liberal supply of moisture in connection with deep rich soil. We have no space now to quote examples in support of this, but the fact is unquestionable, and it will be well to bear it in mind.



British Queen. Fig. 2.

We now come to the selection of varieties, which is a matter of considerable importance. After many trials and experiments here in the vicinity of Rochester, and we ought to add extensive experiments both by amateur and market growers, the following varieties are pretty well settled down upon as the best and most profitable:

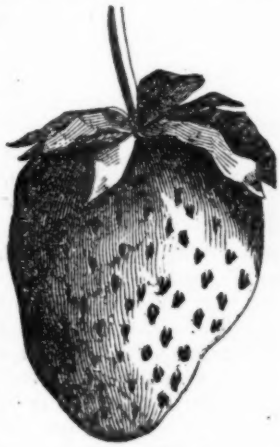
Burr's New Pine, (pistillate.) Fig. 1.—A large, light red berry of the finest flavor. Productive and hardy. R. G. Pardee, Esq., of Palmyra, a first rate amateur grower, exhibited specimens at last year's exhibition of the Genesee Valley Horticultural Society, measuring *four inches* in circumference, and they received the first premium.

Hovey's Seedling, (pistillate.) Fig. 2.—One of the largest and best American varieties—extensively grown and universally admired.

Large Early Scarlet, (hermaphrodite.)—An old, fine variety. Good size, good flavor, and always bears well. One of the best for planting with the pistillate sorts.

Boston Pine, (hermaphrodite.)—A large, fine, productive variety, under high culture, but worthless with bad treatment.

Hudson, (of Cincinnati.)—A most productive variety—the great fruit of the Cincinnati market growers. The Rochester people esteem quite as highly *Burr's Rival Hudson*—a late acid variety, fine for preserving.



Elton. Fig. 4.

To insure the fertilization of the pistillate sorts, one row of the staminate or hermaphrodite varieties should be planted between every four, or in some such proportion.

It is somewhat remarkable that scarcely any foreign varieties prove profitable for our cultivation. In England, and indeed in France, the great strawberry of the day—the one that in every garden and in every market attracts one's attention particularly—is the *British Queen*, (fig. 3.) We have never seen such

crops of strawberries anywhere as those of the *British Queen* around London, in the gardens of the market growers. It does not succeed well here; or it has not so far, that we are aware of. A few large and fine berries, say three or four from a plant, may be obtained; but nothing that can be called a crop. It needs more moisture than it gets with us, and we hope to see it yet tested under favorable circumstances. We had the accompanying drawing made from an ordinary specimen picked in a French garden.

Next to the *Queen* stands the *Elton*, (fig. 4.) This succeeds the *Queen*, being later. It is a large, conical, and beautiful berry. We are not aware of its having been successfully grown in this country, but it is worthy of further trial. In Europe no distinctions are made in regard to the "sexual" character of the strawberry, as in this country; all their varieties are staminate or hermaphrodite — that is, have both stamens and pistils perfect.

CULTURE OF THE FUCHSIA.

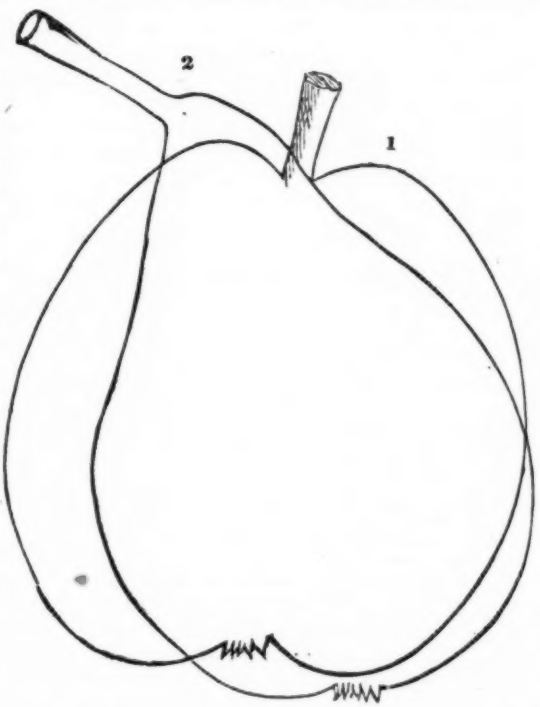
In our last we promised some hints on the propagation and culture of the Fuchsia, which we now proceed to give. We may first remark that among green-house plants or shrubs it is one of the easiest to propagate or manage.

Propagation.—The usual method is by cuttings. The plant from which we wish to propagate is brought, say in the month of February, into a temperature of 60 deg. It begins immediately to grow, and when the young shoots have attained the length of two or three inches, they are taken off, cut smoothly below a joint, and inserted about an inch into sand, or sandy earth, and if there be a bottom heat of about 70 deg. they will root in a week or ten days; but they will root, without a bottom heat, in a temperature of 60 deg. When rooted, they are potted off into small two or three inch pots, the soil being a mixture of about equal parts of sand, leaf-mold, and decayed turf finely chopped up; add to this a small quantity of old, well-decomposed manure. These must be well mixed. Put plenty of drainage in the bottom of the pot, (small pieces of broken pots). In two weeks these little pots, in a temperature of 60 or 70 deg., will be full of roots, and they may be shifted into others a size larger. When established in these, they may be removed into a cooler place, say 45 to 50 deg., and remain there till planted out, if wanted for that purpose. If disposed to grow up tall and slender, they should be topped to give them strength and roundness.

It should be observed that when Fuchsias are planted out, a cool and rather shaded place should be given them. The *Globosa*, *Globosa major*, and *Serratifolia*, are best for this purpose. When the plants are intended to be kept in pots for the summer decoration of the green-house, or drawing-room window, the shifting must be continued as fast as the pots fill up with roots. The same soil recommended above will do; but as the plants increase in size, it may be richer in manure. They must be freely watered and kept near the glass, stopping to make them branch, and tying up to give them a fine pyramidal shape; syringing frequently over the foliage will do them good. With this treatment, the young spring cuttings will, in July, be two feet high or more, and loaded with flowers till September or October. Old plants should be taken into a temperature of say 45 or 50 deg. in February or March, pruned back nearly to the old wood, potted in good soil such as described above, and shifted and managed in the same way as young ones. The fulgens; corymbiflora, and their hybrids, must be two years old before a good bloom is obtained. The *Serratifolia* blooms finely in the months of October, November, and December, and if planted out in May or June, potted in September, and housed with other plants, will be a great acquisition at a dull season.

TWO FINE FOREIGN PEARS.

Doyenne Boussock, (Fig. 1.)—This variety has fruited at Boston for several years, and has acquired there the highest reputation. It has borne for two seasons with us, and we have no hesitation in ranking it with the best varieties we cultivate. We are inclined to think that it will become a popular orchard variety, for the tree possesses great vigor and hardiness, grows rapidly both on pear and quince, and bears well. It has been described in nearly all the pomological works of recent date and begins now to attract, what it really merits, considerable attention. *Fruit*—large, obtusely obovate, resembling a very large specimen of *White Doyenne;* it tapers very slightly to the stem, where it is broad; surface sometimes uneven, but generally smooth and regular. *Color*—pale yellow, slightly marked with russet, and tinged, on the sunny side, with brownish red. *Stalk*—short and stout, pretty deeply sunk. *Calyx*—open, pretty large, in a shallow wide basin. *Flesh*—yellowish white, melting and juicy, with a rich, vinous, perfumed flavor. *Tree*—vigorous, and upright in growth. *Wood*—yellowish brown, with light specks. *Leaves*—large, thick, deep green, glossy, and almost flat; they assume, early in autumn, a fine reddish tint, like some of the forest trees. Ripe early in October, and keeps well into November.



The Duchess of Orleans, (Fig. 2.)—This is another foreign variety proved by successive trials, for a few years past, in various parts of the country, to be of excellent quality. It recommends itself by its beauty, excellence, and productiveness. *Fruit*—large regularly pyramidal, somewhat resembling in form the old English *Jargonelle. Color*—pale yellow, slightly marked with light russet and tinged, generally, with light red on the sunny side. *Stem*—over an inch long, rather stout, enlarged on the end attached to the branch. *Calyx*—open, set in the surface, without any depression. *Flesh*—yellowish, melting, buttery, slightly musky—rich and delicious. *Tree*—moderately vigorous, erect; young shoots wavy in habit. *Young wood*—reddish brown, and thickly covered with oblong, gray dots. *Leaves*—of medium size, flat, and of a peculiar yellowish green color. Last season we had finely ripened specimens, picked green, on the 25th Sept. We had others picked later, about the middle of October. It requires to be picked early and ripened in the house. When left to ripen on the tree it loses its flavor and becomes quite insipid.

PERPETUAL ROSES.

The classes of Roses denominated Perpetuals on account of their blooming at intervals several times during the season, are fast superceding those that bloom but once, unless it be hardy climbers and pillar roses, whose merits are not solely their flowers. Amateurs, who turn to the nurserymens' catalogues and find Remontants, Bourbons, Noisettes, Teas, &c., enumerated, find themselves at a loss in regard to the particular characters and peculiarities (of appearance) of each. We have often been solicited to point out the distinctions, and intended to do so, as well as we could, when we found the following in a French journal and immediately translated it into a sort of English: We must say for it that we have not found in all the Rose books we have read, an explanation so concise and satisfactory. We beg those of our readers who cultivate Roses, to note it well and extend their comparisons on the indications given. It is always satisfactory for one to know what they have, and if we have but one Rose in our garden, it will augment its interest, if not its value, to know what class it belongs to.

CHARACTER OF THE REMONTANT OR PERPETUAL ROSES.*

The greater number of the catalogues of nurserymen who devote themselves to Rose culture, do not offer to amateurs any means of judging whether the varieties which they sell belong to the sections in which they are classed. A simple name designates these sections and the varieties which naturally approach each other the nearest are often found the furthest apart, on account of the alphabetical order in which they are inscribed in the merchant's catalogue.

Having been frequently consulted by amateurs to point to them the precise character of each of the sections of Roses, I have endeavored to abridge them in a few words, following the method of botanists, who assemble under a generic name all the species most alike in their common characters.

The seven principal sections are, The Portlands, called Perpetuals; the Hybrid Remontants of Portland; the Hybrid Remontants of the Isle Bourbon; the Bourbon Roses; the Noisette Roses; the Bengals; and the Teas.

Each of the characters which serve to distinguish these sections should be taken in a general sense —separately their value diminishes to a point where it disappears completely. Take for example, that of flowers united in corymbs or panicles (clusters); in certain cases it is insufficient, for the Noisette and Bengals, which generally and under good treatment produce clusters, may produce only feeble shoots terminating in a solitary flower, on account of bad soil or treatment. The same thing, or the reverse, may manifest itself in other selections,† and the great similarity existing between certain subjects in different sections confounds the one with the other. It is then only by much practice, and the aid of the assemblage of many characters, that we are able to distinguish Noisettes from Bengals, and these last from the Teas.

Section 1. Perpetuals, or Portlands.—The Roses of this section have the thorns very fine, short, and so numerous as to cover almost entirely the branches, to which they give a brownish tint. They have erect shoots, the flower stalks short and stiff, the flowers generally solitary and ovary; seed capsule somewhat long.

Examples.—*Rose du Roi, Duchesse de Rohan, Julie, Krudner, Bernard, La Favorite, &c.*

Sec. 2. Hybrid Remontants of Portland.—These have thorns, hard and sharp, variable in strength and length; the shoots erect, and their habit similar to that of the Portlands. They have also a lengthened capsule, and give often one to five or seven flowers which form a bouquet erect and stiff at the summit of the branches. The Four Seasons Rose gives a correct idea of their habit and flowering.

Examples.—*La Reine, Baron Prevost, Jacques Lafitte, Madam Laffay, Duchesse de Sutherland, Amandine, Louis Bonaparte, Clementine Seringe, Glorie d'Angers, Comte de Montalivet, &c.*

Sec. 3. Hybrid Remontants of the Isle of Bourbon.—The Roses which compose this section appear to hold a middle or intermediate place between the Portland Remontants and the Bourbons, but more frequently present the aspect of the latter. The leaflets are in general strongly dentated (toothed,) but the round form of the seed capsule distinguishes them from the Portland Hybrids. The disposition of the branches—extended in a confused, irregular manner—give them also a particular aspect.

Examples.—*Clementine Duval, Comte Bobrinski, Ernestine de Barante, Colonel Foissy, Geant des Batailles, Vicomtesse de Belleval, &c., &c.*

Sec. 4. Bourbon Roses (Rosiers Isle Bourbon).—This section comprises the Roses which have the wood very smooth and glossy, the side shoots often short and then terminated by a single flower;

* Carriere, formerly Chief Florist at the Museum, Paris, in the *Revue Horticole.*

† It is a very common thing for inexperienced cultivators to form opinions and conclusions from the first feeble growth of a sickly plant. Under such circumstances it is impossible for their true characters to develop themselves, and an opinion based upon such conditions scarcely ever fails to be wrong.—Ed.

but when a branch is developed vigorously, which often happens in many varieties, it produces a longer side shoot terminated by a cluster of flowers, from three to twelve. The thorns are strong, particularly at the base, scattered, and hooked. The leaves are roundish oval, smooth, and of a deep green. The Roses of this section have the seed capsule round, and the branches developed horizontally for the most part.

Examples.—*Queen of the Bourbons, Madam Desprez, Charles Souchet, Paul Joseph, Souvenir de la Malmaison, Souvenir de 4th May, Remond, Mrs. Bosanquet, &c.*

Sec. 5. Noisette Roses.—These Roses resemble, somewhat, the Teas in their foliage, but are distinguished by a greater vigor; by their shoots being ordinarily very long; smooth bark, although more thorny, especially in some cases; by their branches being terminated by a cluster of flowers, in some cases very large.

Examples.—*Amie Vibert, Lamarque, Ophire, Rose Mille-Ecus, Desprez du Luxembourg, &c.*

Sec. 6. Bengal, or China Roses.—The Roses of this section have a smooth bark—the branches generally but little thorny; the leaves more or less elongated and toothed; the flowers disposed in clusters or panicles—the slender shoots never giving but one flower. The capsule is round; the flowers are almost invariably colored, whilst in the Teas, to which these Roses are often related, the flowers are more frequently white or yellow. There are exceptions—Tea *Bures*, and many others.* The flowers of the Bengal are rarely odorous.

Examples.—*Bengal Ordinaire* (Daily China), *Cramoisie superior* (Agrippina), *Eugene Hardy, Beau Carmine du Luxembourg, Augustine Hensan, &c.*

Sec. 7. Tea Roses.—These Roses have many characters in common with the Bengals—the bark of the shoots very smooth, with few thorns; the leaves are shining, and the flowers, often solitary, at the extremity of the branches, these being so slender that in most cases the flowers are reversed and we see them only on the lower side. The branches generally do not acquire great length, but when the plants are vigorous the branches are longer, stronger, and bear from three to five flowers in a cluster.

Examples.— *Devoniensis, Safrano, Souvenir d'un Ami, Vicomtesse Decazes, Eliza Sauvage, Bures, Goubault, Moire, Pactole, &c.*

It will be observed that the peculiarities of the flowers, as to size, form, compactness, &c., which are the really *practical* distinctions, are not taken into account. M. Carriere probably supposes them to be too changing in their nature and dependent on circumstances to be a reliable guide of any great consequence. We may add that sections 6 and 7 do not resist our winters in the open ground, and even 4 and 5 require protection in general, and yet these four sections are the most genuine perpetual bloomers.

* The exceptions in this case are almost too numerous to allow the distinction to be of much practical value.—Ed.

Severity of the Winter.—From all parts of the South and West we hear sad reports of injury done to Fruit Trees, by the unusually intense cold of the past winter. The fruit buds on nearly all sorts of fruit trees are killed, and even young trees, very generally. Mr. Bateham announces through his paper, the destruction of the buds, and many trees, on his "Pomona farm," and he has reduced the price in consequence. A gentleman writes from Kentucky, that "in consequence of the severity of the weather here on the 21st ult., (January,) I have lost all my Peach, Apricot, Nectarine, Cherry, and Plum trees." The destruction will probably be greater than has been experienced in many years. We have examined the buds here closely and frequently, and find, up to this time, only the Peach affected, and even of it, enough of the fruit buds are good to yield a fair crop. A larger number are killed, however, than have ever been before, to our knowledge, at this season (Feb. 18). Trees of all sorts are quite safe; even tender yearlings have not suffered in the least. It fortunately happened that our coolest nights were succeeded by dark days.

Hyacinths for Forcing.—From a large collection of Dutch Hyacinths bloomed in the green-house the past winter, we have voted the following as particularly fine. It should be known that some kinds, first rate in the garden, do not succeed at all in the house. Those of our readers who force Hyacinths in pots or glasses, will do well to make note now for use next autumn. Single—*Baron Thuyl*, dark blue; *Grand Vedette*, light blue; *Grand Vainquerer*, (conqueror,) creamy white; *Orondatus*, light blue; *Unique*, violet red; *Mars*, bright red; *Emilius*, dark blue; *Diebits Sabal hamskie*, light rosy red; *Herstelde Vreede*, rosy pink; *Homerus*, flesh color. Double.—Very few of these force well, but the following are generally good: *Bouquet tendre*, light red; *Lord Wellington*, light blue; *La tour d'Auvergne*, creamy white, large and fine, the best double for forcing.

Ladies' Department.

We have the pleasure of informing the lovers of flowers that our collection of seeds arrived a few days since, and we are having them carefully put up in packages suitable for distribution, and all applicants will receive them by mail before the 1st of April. Mr. Vilmorin informs us that although the last season was unfavorable for raising flower seeds, and consequently he was able only to send us small quantities of some kinds we ordered, yet he forwarded the finest collection ever brought into the country. We are much gratified at this, as one object we had in view was to distribute much better seed than are usually kept at our seed stores. We want no better evidence than the *three thousand* applications already received afford us, that a love of flowers — a love of the beautiful creations of nature — is rapidly increasing. While the farmer increases his crops of grain, of roots and grass, by a wise system of culture, that enlarges the product without injuring the soil, and the farmer's wife improves the quality of butter and cheese, a few hours by either will not be idly spent in caring for the beautiful flowers of the field, created by infinite wisdom to refine the taste and gladden the heart. During the spring we shall give descriptions of the best annuals, and also directions for cultivation. The present month we give a figure of the Ten Weeks Stock. The plant grows from one to two feet high, with an erect branching stem, hoary leaves, and long spikes of flowers; the size and richness of these flowers vary greatly in the different varieties, and some of them are very splendid. The species is a native of the South of Europe by the seashore, whence it was introduced in 1731; but the principal varieties have been originated in England and Germany. The German varieties are particularly beautiful.

GERMAN TEN WEEKS STOCK.

For very early flowers, a few plants may be raised in a hot-bed, or in a pot in the house, to be transplanted into the open ground as soon as the weather is sufficiently warm. For sowing in the open ground, the soil should be dug deep and very finely pulverized with the rake. The seed may then be sown in drills, and slightly covered with fine earth. As soon as the plants show the third pair of leaves, if too thick in the bed, they may be carefully transplanted, leaving the plants in the bed about ten inches apart. Transplanting should be done on a damp day. If the plants are large, they should be removed without disturbing the roots. If much exposed to the wind, it may be necessary to tie them to a stake.

Editor's Table.

We are more than gratified at the evidence we are every day receiving that our efforts to furnish a *good agricultural paper*, and one so cheap as to be within the reach of every farmer, are so well appreciated by those for whose benefit we are laboring. As the large lists of subscribers come in with every mail, requiring all our time to transfer the names to our books, the conviction is thrust upon us that there is "a good time coming," and it is with difficulty that we can suppress a little self-complacency at the thought that we must have done a little to awaken that thirst for knowledge, now becoming so general among American farmers.

We are not yet able to determine what will be our circulation the present year, as "still they come," but it cannot fall far short of 50,000. For this result we are much indebted to the voluntary labors of our friends, and the friends of agricultural improvement, in all parts of the country. We are sending the Farmer now to thousands of Post offices, where only from one to five copies are taken, and where, with a little exertion on the part of our friends, the number might be more than doubled. Will not each of our subscribers at these offices consider himself an agent, and form and forward a Club! Additions can be made to clubs at any time, at the lowest club price. Those who have forwarded clubs of five can increase to eight by forwarding $1; and those who have sent $1 for two subscribers can have the number increased to five, by sending another dollar. We authorize money to be sent by mail at our risk, only asking proper care in enclosing and directing. Back numbers can always be furnished.

Our subscribers in Pennsylvania have reason to complain of the late arrival of the February number. This was unavoidable, but we think it will not occur again.

Sheep Frauds.—We continue to receive complaints from the Western States, respecting "eastern Sheep Pedlars palming off common sheep, which have not been shorn for a year or two, for valuable Merinos." But we were surprised to learn, from Mr. W. Anderson, Ann Arbor, Mich., and others, that even "some of the gentlemen who eloquently condemn such frauds in the agricultural papers," should themselves be accused of playing the same game. Such conduct is far from honorable or politic, and seriously retards the improvement of our breeds of sheep.

Annual Meeting of the N. Y. State Ag. Society.—The annual meeting of this Society was held at Albany, on the 21st and 22d of January. The following is a list of officers for the ensuing year:

President—HENRY WAGER, of Oneida.

Vice-Presidents.

I. James Monroe, of New York.
II. Lewis G. Morris, Westchester.
III. Anthony Van Bergen, Greene.
IV. Winslow C. Watson, Essex.
V. Theodore S. Faxton, Oneida.
VI. Olcut C. Chamberlin, Otsego.
VII. Charles Lee, Yates.
VIII. James McElwaine, Wyoming.

Cor. Secretary—B. P. Johnson, Albany.
Rec. Secretary—Erastus Corning, Jr., Albany.
Members of the Executive Committee—J. T. Blanchard and J. A. Coby, Saratoga; J. Butterfield, Oneida; J. B. Burnett, Syracuse; and Wm. Kelley, Dutchess.

Mr. Delafield, the President, delivered an address on the subject of the World's Fair, and presented the medals awarded by this Society, to those who had received premiums at the London exhibition.

Prof. Norton delivered a lecture on the dependence of agriculture upon science for improvement, in which he said, that Agricultural Chemistry was in its infancy; that it was not so easy a matter to become a chemist as some people imagined; that several years of study and practice were necessary to enable any one to analyse his soil and obtain results satisfactory and useful. He was in favor of an Agricultural College, but advised a small beginning; let students and teachers be provided, and the superstructure and other necessaries would follow in their turn. The lecture was well-timed, and calculated to direct public sentiment aright in respect to agricultural improvement.

There was an exhibition of fat stock, dressed meat, grain, &c., which, although only an experiment, and the weather very unfavorable, was better than could be expected, and such as to warrant a more liberal list of premiums for the coming year.

At a meeting of the Executive Committee on the 23d, it was resolved that the Fair for this year be held at Utica, on the 7th, 8th, 9th, and 10th of September, if the requirements of the Committee are complied with, which we suppose means that the citizens pay all the expenses of the Fair, except the premiums.

Inquiries and Answers.

HOT-BEDS.—We cannot speak favorably of our success with cloth as a substitute for glass in making hot-beds.

TOBACCO SEED.—We refer those who have inquired for Tobacco Seed to the advertisement of J. RAPALJE & Co., in this number.

"BROMER'S MANURE."—R.T.P., Punxsutawny, Pa.—We know nothing of this "*prepared manure*," and would advise no one to purchase such articles without the composition is certified to, so that a correct estimate may be made of its value.

THE FARMER—WHEAT, POTATOES, MANURE, AND FOWLS.—I have been a subscriber to the Farmer nearly a year, and have been delighted with the reading matter it contains. Before we took it, my wife had been a subscriber to a Ladies' Magazine at four times the price, but she now says she prefers the Farmer, as the most interesting and instructive. She is a lover of flowers and gardening, and, by-the-by, wishes you to take her name as a candidate for some of the choice flower seeds the coming season.

I have just now been perusing the last number of the Farmer by a cheerful fire, whilst the rain is fertilizing the parched ground without, and seeing that you notice letters of inquiry on different subjects relating to farming, gardening, horticulture, &c., I feel inclined to submit a few questions to you, which if you deem worthy of notice, of course I shall feel flattered.

I have, for the first time in my life, come in possession of a house and lot of my own. The lot contains four acres; the soil is rather light and has not been improved much; it is of a sandy, loamy nature, the stone in part flint, and a mixture of what is here called the soap stone and iron stone. Now, as I am rather inexperienced in farming or gardening, or anything of the kind, I would like to get some instruction through your paper. There is a thin clover sod on one-half of it, which I had intended to plow under for wheat, but being busy building, and the season extremely dry, I delayed till too late. My potato crop last season was small, though what I had were very good, being very dry and mealy. I think the soil is well adapted to potatoes, and I think I should prefer cultivating them, could I produce two or three hundred bushels to the acre, as you say may be done. I can have access to some ashes, some barn-yard manure, and plenty of lime four miles distant, at 8½ cents per bushel.

I would like, if I knew how to conduct and manage a small henery, to have one if it did not interfere too much with my little field. Could you give me some information as to their probable profit, the cheapest convenient mode of constructing the arrangements, and the best common kind of layers. Can any kind of hens be made to lay all seasons—winter as well as summer? What is the best plan of managing to effect this?

But I presume I have now given you enough questions for once. I have given so many, believing that information may be given through your widely circulated paper, either by you, or some of your correspondents, which will be instructive and entertaining not only to me, but to many of your subscribers in Pennsylvania. WARREN STEACY.—*Bart, Pa.*, 1851.

Potatoes are a better crop than wheat to grow by one who has but four acres of land, all told. Use a little lime and a *great* quantity of ashes per acre, well incorporated with the soil, if you would grow a large crop of tubers. If the land lacks organic matter, apply leaf mould from the woods. A little well rotted manure may be added to bring them up to a high state of productiveness.

You might keep a few fowls with profit, but large numbers of fowls cannot be kept together without great care. They become diseased and die. Fowls want plenty of room, and a chance at the fresh earth. Although many agricultural editors ridicule the large breeds, we have no hesitation in saying that the Shanghaes are the best layers in the country. They are yet costly, and probably cannot now be procured for less than $5 per pair, which is too much to pay except for a pair or two to breed from. They will be cheap in a year or two. It is not natural for any birds to lay during the whole year. Yet much can be done by keeping them in a very warm house, and feeding fresh meat and pounded oyster shells, or lime and bones. A box of ashes, or sand, is quite a luxury, and necessary to their cleanliness.

CARTS.—A correspondent says: "I am much pleased with the plan you offer, so far as I understand it, and wish to get up a cart from the drawing, but find myself at a loss to understand one or two important parts. You say the body sets flat on the axle, and the shafts are attached to the bottom of the body by bent iron plates. Now it appears from the drawing, that the shafts are attached at the extreme front part of the bottom, which I think cannot be the case. How far from the front end are the shafts attached? (1)—What is the shape of the bent irons by which they are fastened? (2) How high are the wheels, and what is the width of the tire? (3) JAMES GARDNER.—*Hollidaysburg, Pa.*

(1) The shafts are attached to the bottom, by bent iron plates, near the axle, and it tips on the bolts which connect the shafts and body there. The usual way is to have shafts and frame attached to the axle, the body to sit on bolsters to bring it level, and to tip on the axle.

(2) Flat, and of sufficient width to correspond with the timbers or wood work.

(3) As a general thing, four and a half feet is the proper height for wheels, and four inches width of tire for the land. It cannot all be made plain, without skeleton drawings, but any good waggon maker who understands the *principle* can adapt the parts to each other.

YELLOW SPOTS IN WHEAT.—I write for the purpose of obtaining information through the columns of your valuable paper, as to the cause of the appearance of yellow spots in wheat. These spots are not generally seen until the warm weather of spring, when all at once different parts of the field will begin to wear a yellow and sickly appearance, and become stunted in growth. Sometimes these spots are not observed at harvest. At other times the disease is nearly fatal. My own opinion is that it is caused by some insect, but what kind of one (if insect it is) is a question. It is not the work of the Hessian fly, neither is it caused by wire worms; nor is it owing to a poverty of the soil, for manuring does not prevent it; it is not owing to a lack of potash, for I observe that the wheat is affected where I burned a log heap before sowing. Any information on this subject would greatly oblige A SUBSCRIBER.—*Olney, N. Y.*

Many believe that the larvæ of the wheat fly (cecidomyia tritici, not Hessian fly,) are in seed wheat when sown, and that the development of the insect in the young plant in the spring, occasions the injury of which our correspondent speaks. Mr. W. P. KINZER, an intelligent observer in Lan-

caster Co., Pa., says: "In May, young insects are easily discerned with the naked eye, (having grown from the nits deposited in the groove of the wheat grain,) lodged in the bulb of the plant between the radicles and culm, or plumule, in the pupæ state, which soon after forms chrysalis, after which, being now in a perfect state, the young fly by means of its ovi positor, escapes through the bulb of the plant, nearly even with the surface of the ground.—(See Albany Cultivator for October, 1836.)

German entomologists enumerate over a thousand insects that prey upon cereals, at the head of which is *tricum*, (wheat). We are by no means sure that Mr. KINZER is entirely correct in his observations. We have, too, hatched out a fly from a seed of wheat, November 8th; and we are not certain where the mature insects, so common in the wheat of Maryland and Virginia, spend their winters after their maturity.

BONE DUST AND SUPERPHOSPHATE OF LIME.—Will you be pleased to inform me, and others interested, through your excellent paper, whether Bone Dust and Superphosphate of Lime are as valuable, as manure, for carrots as for turneps. JOHN W. BAILEY.—*Plattsburgh, N. Y.*

We have never used Superphosphate of Lime for carrots, but think it will be a very good auxiliary of farm-yard dung, sown broadcast at the time of sowing the seed. We intend using it this summer, and hope our friend will do the same and let us have the result. Leave a few rows undressed, by way of comparison, &c.

THE GOPHER.—Your correspondent E. M. B., asks information relative to the habits of the "gopher." Could my young fruit trees and garden vegetables talk, they would tell him that its habits are bad enough. They do their mischief principally during the night, and always under ground, rendering it very difficult to capture them. Many persons call our prairie or ground squirrel by the name of gopher. The gopher always works under ground, while the prairie squirrel (which much resembles your eastern chipmunk) does its mischief upon the surface and in the daytime, and, compared with the former, are inoffensive. The gophers became so numerous and troublesome that I laid aside all business, and appropriated my services for a time to their especial benefit. Having selected a quantity of potatoes the size of a walnut, I put a little strychnine in each, filled my coat pockets, took my spade, and started the rounds, opening every fresh mound until I found their road or hole, into which I rolled a potato. The next morning, armed and equipped as before, I paid them another visit, and found that the holes had all been closed up. I again opened them, together with all new mounds, and as before introduced my poisoned potato. I perseveringly pursued this course for four or five days, since which I have not discovered a sign of one on my premises. This course has been pursued by a correspondent of the Prairie Farmer, with like success.

A few years since, I was much troubled by rabbits girdling my fruit trees. I cut thin pieces from the sides or base of scrub apples, sprinkled a little strychnine on the fresh side, and at night placed them in the places frequented by my troublesome visitors; and such was the unerring certainty with which it laid them out, that a neighboring nurseryman tried it, and gathered half a dozen rabbits at a time, the result of a single night's operation.

Could I have known of this earlier, it would have saved me many dollars and much perplexity; and if it will be of service to any of your numerous readers, use it. WM. L. LARNED.—*St. Anthony, Minnesota Territory.*

GARGET IN COWS.—Will you please to inform CARLTON GRAVES, through the Genesee Farmer, that the garget or pokeweed root operates like a charm, and is all that can be desired as a remedy for the garget in cows, when in a mild form. I have given green root the size and length of a man's finger, mashed fine, as a dose several times. A piece of the root put in the dewlap will have the same effect if the case is not violent. I would recommend that he procure COLE'S book on Diseases of Domestic Animals. S. B.—*Susq. Co., Pa.*

JOSEPH TICKNER, of Harmony, N. Y., gives the result of forty years' experience as follows:

I noticed, in your October number, a question from a brother farmer, desiring information in regard to the treatment of garget in cows. Being in possession of the necessary information, I feel bound to make it known for the benefit of your readers. During above forty years experience, in which time I have cured many of my own as well as my neighbour's cows, I have never known it to fail of curing in a single instance. The remedy is simply this: Take skokeweed and cut up your double-handful fine; mix with meal and feed you cow. One mess will generally effect a cure; if not, try a second, which I never knew to fail.

TO PREVENT HOGS FROM ROOTING.—I was much amused in reading the inquiry in the January number of your paper headed "To prevent Hogs rooting," and was particularly amused by the manner suggested of performing the operation. In the first place, if H. JENNINGS had taken the trouble to have whittled a grunter's nose down, as he should have done, he would have found the tendons spoken of that support the end of the nose and are attached to the top of it. These diverge towards the eyes, near where the muscles are situated which give the power. These tendons are consequently several inches in length, and by severing them at any point between the muscle and end of the nose the object will be effected. The point of a pen-knife is the proper instrument to be used, and there is no necessity of cutting across the nose to accomplish this, as it would require quite a deep gash through the integuments of the nose before the tendons would be cut off by such means. J. H.—*Big Stream Point, Yates Co., N. Y.*

PUMPKINS AS FOOD FOR STOCK.—I have often seen root crops recommended very highly for feeding to stock during winter, and I believe in using something of the kind; but it seems to me that the culture of roots must be somewhat tedious. Now, I would ask, cannot something which is more easily cultivated be substituted for roots? I think that pumpkins would answer the purpose, and that an equal quantity could be raised at much less cost. But do they contain as much nutriment in a given weight as the roots generally recommended? or how much are they inferior to Indian corn? Can they be saved through the winter? These are questions which I am unable to answer. It would be conferring a favor on me, and probably on many others, if you or some of your numerous correspondents would answer them through the Farmer, and tell us all about the proper soil, mode of culture, keeping, &c., &c. MARCUS M. MOSER.—*Flint Rock, Catawba Co., N. C.*

BEE ROT.—Last spring I purchased two swarms of bees, both large and healthy. The season being quite cold and wet, they cast off but one swarm. This fall I found the swarm which swarmed in the summer, to be badly affected with the "bee rot," a disease quite common in this section for a few years past. It appears that the young bees die while in the larva state, and the bees refuse to uncap the cells and rid themselves of the evil. Their decomposition soon causes an effluvia as poisonous to the parent hive as it is disagreeable to the smell. The cause can not lie in the dampness of the season, for we have had it for several seasons when very dry and warm; neither can it lie in the peculiar kind of honey gathered, for a few years since the disease was unknown. Will some of your readers interested in bee-culture state, in your columns, their opinion of the cause, and if possible, suggest a remedy. D. G. FORT. —*Apulia, N. Y.*

HORTICULTURAL.

(M. B. B., Fredricka, Del.) "BURNING STRAWBERRY VINES."—We do not practice nor approve of the operation.

SEA KALE.—Take a piece of good garden soil, trench eighteen inches to two feet deep, turning in about a couple of cart loads of manure and half a bushel of salt to the square rod; plant the roots in rows two feet apart, and about twelve to fifteen inches apart in the rows. Plants can be had at the nurseries at $1.00 or $2.00 per dozen, or may be grown from seed to be obtained at any of the seed stores. To be fit for use it must be *blanched*, either by covering the plants in spring, as it begins to grow, with suitable pots or with light sandy earth. It may also be forced by putting warm stable manure around it.

RHUBARB, OR PIE PLANT.—For this, trench the soil deep and manure heavily. Any good garden soil treated thus will be suitable. Plants should be set three feet apart each way. To be sure of having a certain variety, you must obtain *roots*, but very good sorts are sometimes produced from *seeds*. A great deal depends upon the treatment, *good deep soil and abundance of manure* being the chief requisites.

(L. B., Out West.) *Six best Summer Apples.*—Red Astracan, Early Harvest, Early Strawberry, Large Sweet Bough, Early Joe, and Summer Rose. *Six best Fall Apples*—Fall Pippin, Gravenstein, Pomme Royal, Jersey Sweet, Porter, and St. Lawrence. *Six best Winter Apples*—Baldwin, Swaar, Esopus Spitzenburg, Northern Spy, Talman Sweeting, and Rhode Island Greening.—*Scions* can be sent by mail, if the quantity be small, but express companies are now so numerous that you can procure them easily and safely through them. You will find nurserymen's advertisements in the Farmer. We cannot recommend any one in particular.

(W. B., Blenheim.) Peaches are rarely grafted and do not succeed well. They can be budded on the plum or almond as well as on the peach.

(A. W., Galesburg, Ill.) Half decayed saw dust is a valuable ingredient in manure, and especially stiff soils. We have seen plants growing well in it alone. We have no experience in the application of coal ashes to fruit trees in a *special* way. Has any of our readers? The art of *feeding* fruit trees to make them proof against blight, is unknown—a great subject for future investigations. We know, from experience, that a *dry and moderately fertile soil* is most conducive to their general well being.

(A Subscriber, Buffalo.) Your soil being an "old brick yard" will not be suitable for the peach, which requires a dry friable loam. The apple, pear, and plum, may do well on it, provided it be properly prepared by frequent plowings, and by turning in light substances, such as leaf-mold from the woods, swamp muck, saw-dust, if convenient, and stable manure; sand would also improve it, by increasing its porosity. For select varieties refer to a nurseryman's catalogue, or to back numbers of the Farmer.

(J. P., Fredonia.) The preparation of manure for hot-beds consists in turning it over repeatedly, in order that it may be uniformly decomposed and not *burnt*, as heaps generally are when left to themselves. After being turned several times, the first violent heat passes off and then decomposition going on gradually gives out a more temperate heat and it is fit for the bed.

(Ida, Haviland Hollow.) Petunias, Verbenas, Salvias, Heliotropes, Cupbeas, Lantanas, and Scarlet Pelargoniums, will answer your purpose—blooming all summer. Among hardy Climbing Roses, *Queen of the Prairies* and *Baltimore Belle* are two of the best. The new Phloxes are worthy your attention. *Six fine cheap Dahlias*—Queen of the East, Purple Standard, Striata Perfecta, Triomph de Magdeburg, Stern von Miedling, and Indispensable White—all distinct and good.

A REQUEST TO FRUIT GROWERS!—Mr. A. PORTER, Nettle Lake, Ohio, has an orchard of apple trees to graft and desires us to request fruit growers,

who may have them to spare, to send him grafts of choice kinds. He believes there are many who will do it with pleasure, and we trust, having done our duty, he will not be disappointed.

(A. J. H., Newfane.) GRAFTING QUINCES ON THORNS.—It will do very well if the thorns be not too large, say about an inch in diameter, and graft near the ground. It would be better to graft where they stand and remove after one year's growth of graft.

(J. M. B., Adams, Jeff. Co., N. Y.) STOCKS FOR THE PEACH.—The best stock for the peach in your cold "Black River" country, will be the plum, and the native species that grows quite late is the best, working well after the peach buds are mature. Bud near the ground.

(F. W. L.) DWARF ORNAMENTAL TREES.—There are certain kinds of ornamental evergreen trees that may be kept of small size by shearing or pruning them annually. Such are the Arbor Vitæ, all the species and varieties; the Red Cedar; the Hemlock; and the White Cedar. The Norwegian Fir also bears shearing well and may be kept of small size where fancy or circumstances require it. The better way, however, is, in the case of ornamental trees, to select, for small places, species that do not attain large size—rather *shrubs* than trees. Dwarfing by the use of certain stocks, as in fruit trees, is not practised, and would probably be of little practical advantage.

DWARF FRUIT TREES.—You have an excellent article in your last number, on the subject of Dwarf Fruit Trees, but as they are but little known in this section, and as we are ignorant of their comparative value, you will much oblige some of us who are about to plant trees next spring, by answering the following questions in your March number. What is the longevity of the pear upon quince? (1) What is about its maximum of fruit when full grown? (2) Which will produce the most fruit during the first ten years, the dwarf or the standard, supposing both of a kind? and which during the first fifteen years? (3) We are aware that a variety of circumstances would qualify the answers; but without supposing you can be exactly definite, we thought you would, from much experience and observation, be able to give such an answer as will settle the question of comparative value. C. W.—*Pleasantville.*

(1) There is so much depending upon circumstances that we can give no very definite answer. One variety under favorable circumstances might endure fifty years or more, whilst others might endure half that time. If varieties be selected that are well known to flourish on the quince, and they are planted on suitable soil, and be afterwards properly taken care of, they will, at any rate, endure an ordinary life time in a healthy and productive state.

(2) We know trees that are not yet full grown, and produce annually a barrel of fruit. But we think that few varieties would come up to this, quite.

(3) During the first ten or fifteen years, those on the quince will unquestionably yield the largest amount, because they will bear from the third year, whereas those on the pear will not commence bearing to any amount before the eighth or tenth year. It is after the fifteenth year, or we might say after the twentieth year, that standard pear trees on pear stocks yield large returns. For a solid, permanent, *investment* in pear culture, plant standard trees on pear stocks, but for immediate returns, say for the first ten or fifteen years, plant those on quince.

CRANBERRY CULTURE.—I should like to inquire, through your paper, respecting the cultivation of the Cranberry plant—where they can be obtained; what soil is necessary for their growth; the probable expense of getting them; what time is best for transplanting; and how they are to be treated after they are transplanted? Your answer to the above questions will greatly oblige several of your subscribers. C. E. CLARK.—*Dansville, N. Y.*

The attempt to cultivate Cranberries on high land, we believe, has been a failure. They are natives of the swamps, and we think they will thrive only on mucky land. We have had no experience in their culture.

Fruit Scions for 1852.

THE subscriber will furnish Scions for this season's grafting, of the celebrated fruits of Western New York:

APPLE.

Northern Spy,	*Ribstone Pippin,*
Norton's Melon,	*Summer Rose,*
Wagener,	*Rambo,*
St. Lawrence,	*Esopus Spitzenburgh,*
Canada Red,	*Yellow Bellflower,*
Swaar,	*Roxbury Russett,*
Baldwin,	*Early Harvest,*
Pomme Grise,	*Early Strawberry,*
Seek-no-further.	*Autumn Strawberry,*
Hertfordshire Pearmain,	*Early Joe,*
Fameuse,	*Fall Pippin,*
Bourassa,	*Holland Pippin,*
Twenty Ounce Apple,	*Rhode Island Greening,*
Hawley, or Doosc,	*Talman Sweeting,*
Gravenstein,	*Green Sweeting,*
Bailey Sweeting.	*Porter,*

PEARS.

Virgalieu,	*Bartlett,*
Seckel,	*Onwego Beurre,*
Swan's Orange," or Onondaga,	*Brown Beurre,*
	Osband's Summer,

and most of the Foreign varieties.

Apple Scions $1.00 per 100, and Pear Scions Three Shillings per dozen. They will be carefully packed and sent by Express or by Mail. A discount on apple scions will be made to nurserymen.

Early orders are requested, to insure a supply. Address me (post-paid) at Rochester, Monroe Co., New York.

JAMES H. WATTS.

N. B.—In all cases where it is possible, I will send samples of the "Northern Spy" apple. Reference can be made to Mr. VICK, of the "Farmer."

Rochester, Jan., 1852.

Rochester Commercial Nurseries.

BISSELL & HOOKER offer for sale, in large or small quantities, a large stock of Fruit Trees, which they believe are inferior to none in health, beauty, or accuracy—among which are Apple, Pear, Peach, and Cherry Standards; Dwarf Pears on imported Quince stocks; Grape Vines, native and foreign; Raspberries, Strawberries, Currants, Gooseberries—strong, imported plants, at low rates. Osage Orange hedge plants. Ornamental Trees, Evergreens, Roses, &c. Green-house and Bedding-out Plants, of superior quality. Double Dahlias, Calceolarias, &c.—all of which we are confident will give satisfaction.

A general Catalogue will be sent gratis to all post-paid applicants. [3-3t]

NEW AND FINE SHRUBS AND PLANTS.

ELLWANGER & BARRY, Proprietors of the Mount Hope Nurseries, Rochester, N. Y., solicit the attention of those interested in Ornamental Plants to their large stock of rare and beautiful Shrubs and Plants, among which are the following:

HARDY SHRUBS.

Deutzia Scabra, or Garland Deutzia, a fine white flowering shrub.

Forsythia Viridissima.

Ribes Gordoni—Gordon's Currant—yellow and crimson, very fine.

Spiræa Prunifolia flore pleno—small, double, white flowers in great profusion; fine dense habit.

Spiræa Lanceolata, or Reevesi, one of the finest of the genus.

Spiræa Chamædrifolia, Niconderti, Lindleyana, Japonica, and twenty others.

Syringa (Philadelphus) *Pubescens, Zephorii, Cordata, Double, Columbiana*, and others, all fine.

Lonicera Ledibouri—a fine Californian shrub.

Tamarix, Africana, Germanica, Gallica, and *Lebanotica.*

Viburnum Lantanoides, a beautiful shrub.

Wiegela Rosea—the finest hardy shrub, lately introduced from China.

The above excellent things can be furnished in quantities, at low prices.

SELECT GREEN-HOUSE AND BEDDING PLANTS.

FUCHSIAS.—Our collection is one of the best in America. The most distinct and best varieties yet introduced and quite rare, such as *Pearl of England, Fair Rosamond, Serratifolia, Serratifolia multiflora, Fulgens Corymbiflora, Corymbiflora Alba, Magnificent, President, President Forcher, Spectabilis*, &c., are propagated largely.

VERBENAS.—A collection of fifty varieties, comprising everything fine introduced to this time.

HELIOTROPES.—*Souvenir de Liege, Corymbosum*, and some new varieties just received and to be announced hereafter.

PLUMBAGO LARPENTÆ.

CUPHEAS.—*Platycentra, Stringulosa*, and others. The first is one of the finest bedding plants.

LANTANAS.—*Ewingi*, the fine new Cincinnati variety, rose and straw color; *Mutabilis Major*, and several others.

BOUVARDIAS.—*Triphylla*, and others.

ABUTILONS.

SALVIAS.—*Splendens Major, Oppositifolia, Aurea*, and others—superb plants for masses.

FABIANA IMBRICATA.

HYDRANGEAS.—*Hortensis, Japonica, Cordata, &c.*

BUDDLEA LINDLEYANA—a fine shrubby plant with large clusters of purplish lilac flowers; blooms in the autumn.

HABROTHAMNUS ELEGANS—a superb plant, half shrubby, with large clusters of showy crimson flowers; blooms equally well in the open ground in autumn, and in the house in winter.

PETUNIAS.—A large collection, embracing all distinct and good sorts.

LOBELIA FULGENS INSIGNIS, LOBELIA FULGENS ALBA—flowers of dazzling beauty—both new.

VERONICA LINDLEYANA—a charming autumn flowering plant; long elegant spikes of pale (nearly white) blossoms. *Veronica Andersoni*—finest of all—*new.*

TREE VIOLETS—white and purple.

CHRYSANTHEMUMS.—A fine collection of the novel and beautiful pompone or dwarf varieties.

DAHLIAS.—A superb collection, including the English and French prize sorts of 1851—all at very low rates.

CINERARIAS.—A fine collection of new and beautiful sorts, including *Magnificent, Attilla, David Copperfield, Wellington, Beauty of Newington*, &c. &c.

All the above articles furnished in large or small quantities, at low rates, and packed so as to go any distance with safety.

Priced Catalogues of Dahlias, &c. &c., ready 1st of March.

March 1, 1852.

Seneca Lake Highland Nurseries,

CATHARINE, CHEMUNG CO., N. Y., Near Havana Depot, N. Y. & E. R. Road. A complete assortment of Nursery articles, wholesale and retail. Great inducements to Eastern, Southern, and Western dealers. Packages amounting to $10 delivered at New York and Dunkirk, or any intermediate station on the Erie Railroad, free from charges to the purchaser. Price and Descriptive Catalogues furnished gratis, by mail E. C. FROST.

March 1, 1852.—3-1t*

HIGHLAND NURSERIES, NEWBURGH, N.Y.

A. SAUL & CO. have the pleasure to announce to their patrons, and the public in general, that their stock of Fruit and Ornamental Trees, which they offer for sale the coming spring, is of the very best quality, and embraces everything in their line that can be procured in the trade.

Dealers and planters of trees on a large scale, will be treated with on as liberal terms as can be done by any establishment of *reputation* in the country. They flatter themselves that for correctness of nomenclature of fruits, (which is a serious consideration to planters) that their stock is as nearly perfect as it possibly can be, having been all propagated on their own grounds, from undoubted sources, under the personal supervision of Mr. Saul. They have propagated in large quantities all the leading standard varieties, which are proved to be best adapted for general cultivation, especially those recommended by the American Pomological Congress at its several sessions, as well as all novelties of recent introduction, and kinds particularly suited to certain localities, and sections of the Union and Canadas.

Their stock of Pear Trees is the largest they have ever had to offer for sale, and among the largest in the country, and consists of over 50,000 saleable trees.

The stock of Apple Trees is also very large, as well as Plums, Cherries, Apricots, Peaches, Quinces and Nectarines. Also, Grape Vines, Gooseberries, Currants, Raspberries, Strawberries, &c., &c.

Pears on Quince, Cherry on Mahaleb, and Apple on Paradise stocks, for pyramids and dwarfs for garden culture, and of which there is a choice assortment of the kinds which succeed best on those stocks.

DECIDUOUS AND EVERGREEN ORNAMENTAL TREES AND SHRUBS.

Embracing all the known kinds suitable for street planting, of *extra size;* also, the more rare and select, as well as all the well known kinds suitable for Arboretums, Lawn and Door-yard planting, &c., including Weeping Trees, Vines, Garden and Climbing Roses in great variety. Hybrid Perpetuals, Hybrid China, Hybrid Bourbons, Hybrid Damasks, Hybrid Provence, and Bourbon, Tea, China and Noisette, and Prairie, and other Climbing Roses.

A large quantity of Arbor Vitæ for Screens, Buckthorn, Osage Orange, and other hedge plants.

The above will be sold on as liberal terms as similar stock can be purchased elsewhere. For further particulars see catalogues, a new edition of which is just issued, and will be forwarded to all post-paid applicants by mail. A liberal discount will be made to purchasers who buy to sell again, and extensive planters on their own account.

P. S.—Freight paid to New York.

Newburgh, March 1, 1852. [3-2t]

Linnæan Garden and Nurseries, Flushing, N.Y.

WM R PRINCE & CO, in addition to their immense stock of Fruit and Ornamental Trees of the usual sizes, have 10,000 Pear Trees of bearing size, 5 to 8 years grafted on both Pear and Quince; and extra sized Cherries, Plums, Apricots, Apples, &c. The collection of Evergreen Trees is unequalled, and of every size from seedlings to fifteen feet high. All will be sold low in quantities.

Priced Catalogues sent to post-paid applicants enclosing stamps. Also, a Wholesale Catalogue for Nurseries.

Cedrus Deodora and Lebanon, Yews, Junipers, Pines, Spruces, Arbor Vitæ, &c., of large sizes. [2-1t*]

Fruit and Ornamental Trees.

ELLWANGER & BARRY beg to remind those who intend to plant next spring, that their stock of Standard Fruit Trees for orchards, Dwarf Fruit Trees for gardens, Ornamental Trees for streets, parks, gardens, and pleasure grounds, Shrubs, Roses, &c., is very large, and offers great inducements to those who desire first rate articles.

A complete Descriptive Catalogue is sent gratis to all who apply post-paid and send stamps for postage, which must now be pre-paid—5 cts. for 500 miles or under: 10 cts. over 500 miles and below 1000. A Wholesale Catalogue also furnished.

☞ See advertisement of Shrubs, &c., &c.

Mount Hope Nurseries, Rochester, N. Y., March 1, 1852.

Osage Orange for Hedges.

WE can furnish any number of fine yearling plants at $1.50 per 100, or $10 per 1000, or at $8 where 3000 or more are taken. Orders should be sent early. It takes about 33 plants to the rod, planted either in single rows at six inches apart, or in double rows a foot apart—either of which makes a good hedge. ELLWANGER & BARRY.

Rochester, N. Y., Jan., 1852.

GENEVA NURSERY,

CASTLE STREET, GENEVA, N. Y.

W. T. & E SMITH, proprietors, invite the attention of Fruit Growers and Planters of Trees generally, to their large stock of well grown Trees, grafted and budded by the proprietors themselves, with great care. Greater inducements are offered here than at any other nursery. Our stock of Trees consists of 40,000 Apple Trees, well grown, with fine heads; 10,000 Pear, the best sorts; 12,000 Cherry, fine trees; 30,000 Peach, one and two years old; 1,000 Plum; 2,000 Isabella Grapes, one and two years; Apricots, Nectarines, Almonds, Dwarf Pears, Dwarf Apples, Dwarf Cherries, Raspberries, Strawberries, &c. &c. Ornamental Trees, Roses, Dahlias, Buckthorn, English Hawthorn, Scions for grafting, Seedlings, &c.—together with a general assortment usually found at other nurseries. [3-1t*]

Fruit Trees.

I AGAIN offer a large stock of Trees—about 100,000—of fine thrifty growth, composed in part of Apple, Pear, Peach, Cherry, &c.; together with an assortment of Green-House Plants suitable for bedding out—all of which are offered at extremely low prices.

Wholesale prices of Apple Trees will be from $9 to $10 per 100.

I would recommend to buyers, after examining other nurseries, to inspect mine before purchasing.

CHARLES POWIS.

Greece, Ridge Plank Road, N. Y., March 1, 1852.—3-3t.

State Agricultural Warehouse.

THE Subscriber would respectfully invite the attention of Farmers and planters to his varied assortment of Agricultural and Horticultural Implements, among which may be found Prouty & Mears' celebrated and highly approved Center Draught Plows; Emery & Co.'s Improved Railroad Horse Power and Thresher, all of which took the first premiums at the late State Agricultural Fair, and are unequalled by any now in use; together with the latest and most improved Plows, Straw Cutters, Fanning Mills, Corn Shellers, Seed Sowers, Cultivators, Harrows, &c., &c., which I will sell at as low rates as any similar establishment in the United States.

I shall at all times have on hand a full stock of Field and Garden Seeds, Guano, and all other fertilizers in the market, which may be had on the most reasonable terms.

Persons purchasing articles from me may rely upon their giving satisfaction, as I intend keeping only such as I can fully warrant. A. LONGETT,

March, 1852.—3-1t. No. 25 Cliff street, New York.

Plows! Plows!!

WE are now getting in our spring supply of the celebrated Eagle Plows from Boston; also, the justly celebrated Curtis Plow, made by H. C. Curtis, Albion. These Plows stand unrivalled in this country, and are made expressly for use. They are made of superior timber, and the workmanship cannot be beat in this or any other country. All Plows sold by us are warranted to perform as recommended, or they may be returned and the money refunded.

J. RAPALJE & CO.,

Genesee Seed Store and Agricultural Warehouse, Rochester, N. Y.

March 1, 1852.

For Sale.

ONE of the best Devon Bulls in the State of New York, 4 years old this coming spring. Said Bull may be seen on my Farm, 3 miles west of Rochester, on the plank road in the town of Gates, Monroe county, N. Y. Pedigree, price, &c., may be obtained by personal application, or by letter addressed to the subscriber at the Rochester, P. O.

March 1, 1852. WILLIAM R. BOOTH.

Peruvian Guano.

THE undersigned has received his supply of Guano, put up in bags of 160 lbs. each. The bags are branded "Genuine Peruvian Guano, No. 1, Imported by Theodore W. Riley, New York," which is warranted pure. For sale by

A. LONGETT,

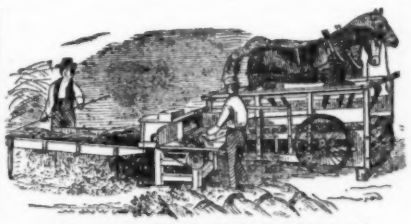
[2-1t] 25 Cliff street, New York.

50,000 Osage Orange Plants,

ONE YEAR'S GROWTH, price $8 per 1000. No charge for packing or cartage, if 2000 or more are ordered.

OSAGE ORANGE SEED, at the lowest market price, wholesale or retail, as early in the winter as the new crop can be obtained from Texas. M. B. BATEHAM.

Columbus, Ohio. [1-2t]



ALBANY AGRICULTURAL WORKS.

Hamilton, Liberty and Union Sts.

THE subscribers are the originators and sole proprietors of the above works, which embrace a very large collection of labor-saving Machinery, not excelled in this country for facilitating the manufacturing of Agricultural Machinery to any desired extent, and with uniform accuracy and despatch.

WAREHOUSE AND SEED STORE,

369 AND 371 BROADWAY.

Our Warerooms are among the most spacious in the city, and collection of articles on hand large and new—most of the implements being of our own manufacture, and the Seeds grown for our own trade.

EMERY'S PATENT N. Y. STATE AG. SOCIETY'S FIRST PREMIUM RAILROAD HORSE POWER, AND OVERSHOT THRESHER AND SEPARATOR.

The above Horse Powers have been awarded the highest Premiums at the Fairs of the New York State Agricultural Society in 1850, and again in 1851; also, the highest Premium at the Michigan State Fair, at Detroit, in September, 1851, where a majority of the Committee owned and were using Wheeler's Powers on their farms, having purchased them previous to seeing our own; also a Gold Medal at the American Institute in 1851. It was also exhibited at the State Fairs of Ohio, Maryland, and Pennsylvania, and received the highest awards which could be given by the rules of their Societies. In every case, it has been in competition with all endless chain Powers of any note in this country—among which were Wheeler's Rack and Pinion. All of our Powers have the name, EMERY & CO., cast upon every link of the chain and hub of band-wheel. None others are genuine.

All the above are offered on liberal terms, at Wholesale or Retail, at the Albany Agricultural Warehouse and Seed Store, 369 and 371 Broadway, Albany, N. Y.

Catalogues gratis, on application.

March, 1852. EMERY & CO.

Cochin China and Shanghae Fowls for Sale.

THE subscriber has for sale a few pairs of his celebrated stock of *Cochin China* fowls, of his own importation, warranted true to their name and not excelled by any other stock in the country for good qualities. Also, a few pairs of of the Marsh Stock of *Shanghaes* and *Sumatra Game Fowls*. Reference given in regard to them, if desired.

EGGS FOR SETTING.

Eggs furnished from the above stock carefully packed for transportation, and orders for the same addressed to the subscriber will be promptly attended to. Price of Eggs $2 per dozen. CHARLES SAMPSON,

[3-2t] West Roxbury, Mass.

Potato Onions.

FIFTY BUSHELS genuine English Potato Onions for seed, now in store and for sale, at $2.50 per bushel, at the Genesee Seed Store, 65 Buffalo st. Rochester, N. Y.

March 1, 1852. J. RAPALJE & CO.

Notice.

THE undersigned has disposed of his interest in the "State Agricultural Warehouse," No. 25 Cliff street, New York, to Mr. A. Longett, who will in future conduct the business on his own account. GEO. H. BARR.

New York, Jan. 10, 1852.—3-1t.

50,000 Apple Stocks Wanted.

TEN TO FIFTY THOUSAND Seedling Apple Stocks, of thrifty *two years' growth*, are wanted and will be paid for in Cash. Apply, or send samples, with price, immediately, to JAMES VICK, Jr.

January 1, 1852. Genesee Farmer Office.

Prices of Agricultural Products at the Principal Markets in the United States. — Mar. 20, 1852.

	New York.	Boston.	Rochester.	Chicago.	Cincinnati.	Pittsburgh.
Beef, per 100 lbs.	$4.50 a 6.00	$7.00 a 8.00	$4.00 a 4.75	$4.00 a 4.25		
do mess, per bbl.	8.50 11.50	10.00 12.50	11.00 11.50			
Pork, per 100 lbs.			6.00 6.25	4.00 4.12½		
do mess, per bbl.	14.00 15.37½	16.00 16.50	15.00 15.50	16.00 16.50	$14.00	
Lard, per lb.	9 9½	9½ 10	8 10	7½ 8	6¼ a 8	
Butter, do	16 25	16 20	12 16	8 10	8 15	$0.16 a 17
Cheese, do	6½ 7½	6 8	6 6½	5 7	6½ 7	6¼ 7
Flour, per bbl.	4.87 6.00	4.75 6.00	4.25 4.75	3.00 4.00	3.37 3.55	2.75 3.12½
Wheat, per bush.	1.17 1.22		96 98	50 68	58 61	60
Corn, shelled, per bu.	67 72	70 71	48 50	28 35½	25 30	39 45
Rye, do	76	74 75	69 70		48 50	46 48
Oats, do	40 45	40 45	31	17 20	22 28	31
Barley, do	76 80	95 1.00	67 70		50 55	46 50
Clover seed, do	8a9½ pr. lb.	9 a 12 per lb.	4.75 5.25	12½ per lb.	5.90 5.50	5.37 5.50
Timothy seed, do	14.18 per tce.		2.00 2.50	2.25	1.25 2.50	
Flax seed, do	1.35 1.37½	1.50 1.60	1.25 1.50	1.00	1.00	
Hay, per ton	17.00 18.00	13.00 15.00	8.00 12.00		8.00 13.00	13.00 16.00
Wool, per lb.	30 44	31 46	30 40	30 40	26 35	
Wood, hard, per cord		6.00 7.00	4.00 4.50	3.25 5.00		

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Union Agricultural Warehouse and Seed Store.

RALPH & CO., No. 23 Fulton Street, New York, near Fulton Market, Dealers in all the most approved Agricultural and Horticultural Implements; Imported and American Field and Garden Seeds; Ornamental Shade and Fruit Trees; Guano; Bone Dust; Poudrette, &c. Wrought Iron Plows, Trucks, Barrows, &c., &c, always on hand. Also, the Excelsior, or California Plow. [3-3t]

Tobacco Seed.

TWENTY POUNDS first quality Connecticut River and Virginia Long Leaf Tobacco Seed now on hand and for sale at the Genesee Seed Store. The Seed can be sent in ounce packages, by mail, to any part of the United States. Packages, $1.00 per ounce—4 oz. for $3.00 Postage paid.

J. RAPALJE & CO.

March 1, 1852. 65 Buffalo St., Rochester, N. Y.

A Farm Wanted.

A FARM of from 40 to 50 acres, with a good house and out buildings. It must be well adapted to Fruit culture. A letter, post-paid, giving a description of the proprty, and mentioning terms, addressed to SMITH, to the care of EVANS & Co, Southern Hotel, Buffalo, will receive an immediate answer. [3-1t]

To American Inventors and Purchasers of Patent Rights.

DEWITT C. LAWRENCE, late Chief Clerk of the U. S. Patent Office, having resigned for the purpose of resuming his professior in conection with the business of that office, tenders his services to American Inventors as Solicitor for Patent Rights. All the necessary papers and drawings prepared for obtaining Patents, and personal attendance given at the office on all business entrusted to his agency. Examinations made to determine the patentability of inventions, previous to incurring the expense of making application, upon a rough sketch and description being furnished accompanied by a remittance of $5.00.

Investigation made, and advice given, as to the validity of Patent Rights; and searches of the records in reference to title to territory conveyed, including the fee for recording an assignment, upon a like remittance of $5.00. Current Bank notes will be received at par, thus avoiding the risk incurred from the transmitting of specie by mail.

Refers to Hon. L. Cass, Hon. A. Felch, and the Members of the 31st Congress generally.

Washington City, D. C., March 1, 1852.

Cranberry Vines.

100,000 CRANBERRY PLANTS fine for transplanting, and can be packed and forwarded to any part of the Union. They are of the variety raised in New England, and abundant bearers. For sale by F. TROWBRIDGE,

[3-1t*] New Haven, Conn.

The Practical and Scientific Farmer's own Paper.

THE GENESEE FARMER,

A MONTHLY JOURNAL OF

AGRICULTURE AND HORTICULTURE,

ILLUSTRATED WITH NUMEROUS ENGRAVINGS OF

Farm Buildings, Domestic Animals, Implements, &c.

VOLUME XIII, FOR 1852.

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December, 1851. *Rochester, N. Y.*

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